The Journal of the American Medical Association

Published under the Auspices of the Board of Trustees.

VOL. XLVII. CHICAGO, ILLINOIS, SEPTEMBER 15, 1906. No. 11.

Address

THE ART OF MEDICINE.*

EDWARD HORNIBROOK, M.D.
CHEROKEE, IOWA.

Amost all the phases of medical thought are so thoroughly discussed in the books of specialists and in the periodical press that the general practitioner who has neither time nor opportunity to pursue new lines of investigation finds difficulty in selecting a theme which will not be already familiar to the members of this learned society. I have, therefore, chosen a subject which may invite criticism and which shall be suggestive, even if not instructive. Is the art of medicine improving? This question would be answered affirmatively, at first thought, by the majority of physicians. Yet there are many thoughtful men who, while admitting that scientific medicine has made wonderful progress during the last half century, are still constrained to believe that the Art as distinguished from the Science has deteriorated.

SCIENTIFIC RESEARCH AND MEDICAL PROGRESS.

Until recently the path of medical investigation might be compared to a plateau without obstructions, where the wheels of progress were unimpeded and where progression, though rapid, was often in a circle, ending where it began, or so near it that actual advancement was scarcely discernible. It is obvious that in the cycles of the ages substantial gains have been secured. In recent years the growth of the sciences has been so luxuriant that achievement has been slow, sometimes impeded and always laborious.

Isolated facts in biology, histology, chemistry and bacteriology have been collected with such industry and rapidity that an attempt to classify them and to draw practical conclusions causes discouragement and leaves the mind in doubt and uncertainty.

The medical journals teem with discussions of scientific subjects and devote little space to matters pertaining to the treatment and cure of disease. One who would venture to say that he did not believe in the germ theory of disease would be considered as an archaist, and yet none of us believe that a germ is the etiologic factor in all diseases. There are comparatively few maladies in which the specific germ has been isolated, and, therefore, our boasted scientific progress has only shed light on a few of the problems which daily claim our attention. Most of our useful knowledge has been gained from the accumulated experience of our ancestors and contemporaries and not from modern research.

What is disease? The Century Dictionary gives this definition: "A marked, painful or otherwise distressing physical condition, acute or chronic, which may result either in death or in a more or less complete return to health; deviation from the healthy or normal condition of any of the functions or tissues of the body."

What we know about disease of the nervous system has been chiefly acquired by close observation of the clinical symptoms, aided by scientific methods of investigation. Disorders of the chylopoietic viscera manifest themselves by their syndrome, and do not readily yield their secrets to microscopic, bacteriologic or *x*-ray investigation. The pathologic conditions resulting from disorders of the ductless glands may be studied scientifically, but such study has hitherto shed little light on their etiology or treatment. Skin diseases come in the same category, except the few of parasitic origin. Functional derangements elude instruments of precision and often baffle the experienced physician.

For preventive medicine scientific reasearch has done much; for the art of medicine the triumphs of modern investigation are limited. Eliminate diphtheria antitoxin and perhaps antitetanic serum and the other remedial agents which have been used on account of the discovery of specific germs are of questionable utility. When germs are known to be the etiologic factor, science and common sense have suggested methods more or less successful for preventing their entrance and for neutralizing the effects of the toxins which they produce. So far as we are enabled successfully to accomplish these objects, we acknowledge that science has blazed the way for our guidance, but she has contributed nothing which has shortened the duration or lessened the morbidity of scarlet fever, measles, whooping cough, influenza, typhoid fever, etc. What vaccination has done for smallpox is the result of observation and experience, not the result of the discovery of scientific facts or their application to the prevention or cure of disease.

Therefore, I question the wisdom of so framing the curricula of medical colleges that a large part of the time which might profitably be spent in the study of the symptomatology of diseases and perverted functions is devoted to a study of the multiform and varied appearance of germs, which as yet have been proved to be the cause of but few of the maladies which affect humanity.

For the treatment of these distempers accumulated experience is our only reliable guide; and the time which should be given to appropriating this experience is devoted to bacillus hunting or to that which yields infinitesimal results in enabling the student to battle with the many problems which will engage his attention in practice. What use can be made of the physician's knowledge of *Staphylococci*, *Streptococci* or *B. pyocyaneus* in his diagnosis or treatment of neurasthenia, hysteria or neuritis? What benefit will the various theories of immunity be to him or his patient in making a differential diagnosis between gastric ulceration and

* Oration on Medicine before the Iowa State Medical Society.

cholelithiasis? How can he apply his theories of phagocytosis in differentiating mitral insufficiency from aortic regurgitation?

The study of the side chains of immunity is interesting, but it affords no assistance in distinguishing one from another the numerous family of skin diseases. Scientific research has done little to elucidate the disorders of the special senses, and less to enable us to understand the pathologic changes which affect mentality. How mental states affect bodily functions and how physical conditions react on mental processes seems to be beyond the pale of science, and yet how perplexing are the problems which they present for our consideration. Until we understand the force evolved in procreation, science will grope in the dark when grappling with cellular or nervous dyscrasiæ. Until we know something of the mind, or until it can be shown that it has a material organism discernible by the physical senses, science will avail nothing in elucidating the influence of mind over matter.

No analyst or synthetist has yet succeeded in bringing within our purview the nature of the force generated by impregnating the female germ or discovered the potentiality thus inaugurated which starts the cellular multiplication necessary to produce the perfect plant or animal. No instrument of precision, however great its power, and no form of light, electrical or chemical, has enabled us to observe or detect the elements of which thought is composed. We can observe the phenomena which both life and mind exhibit, but we do not understand what they are. The physical effects which life and mind produce may be learned by observation and experience, not by test tube, crucible, *x*-ray or microscope.

The conclusion is, therefore, inevitable that much of the progress in the art of medicine must come from close observation as well as from the meritorious and painstaking work of the pure scientist.

PROVINCE OF SCIENTIFIC RESEARCH.

Let me be not misunderstood. I do not disparage the aid which the collateral sciences have contributed to medical advancement. Research has done much to explain the reasons for the effect of the means which had been used empirically in the treatment of disease. Science has shed light on problems which were unsolvable before modern methods of investigation were introduced; but she has not supplanted the knowledge gained through centuries of experience.

In my opinion, her province is to aid, elucidate and explain, but not to set aside what has already been established. For example, the beneficent effects of vaccination were proven before any theory of immunity was exploited. Quinin had long been employed and its uses well understood before the *Plasmodium malariæ* was discovered. Iodin was used to arrest suppuration before the pus-producing cocci or bacilli had been thought of and before the words toxemia and intoxication found a place in medical nomenclature.

My contention is not that the sciences should be studied less, but that symptomatology and therapeutics should be studied more, so that instead of waiting for the proofs and demonstrations of science our art may be promptly used for the arrest and cure of even the diseases in which the microbe has been proven to be the etiologic factor.

> "Science still stops to reason and explain,
> Art claps the finger on the bleeding vein."

Our diagnosis is made from subjective and objective symptoms in 95 per cent. of our cases, and when scientific methods are invoked they generally confirm the conclusions reached by the old, reliable methods. To delay action until our opinions are confirmed by the scientists often causes us to lose the golden opportunity for combating and arresting disease. The symptoms of diphtheria are so pronounced that deferring treatment and not enforcing quarantine until a return can be obtained from the state bacteriologist is so fraught with danger that it might be characterized as criminal negligence. If in typhoid fever the proper dietetic and hygienic methods are not enforced until proof is afforded by the agglutination test or finding the bacillus, the mortality of the disease will be greatly increased.

The best results in the treatment of pulmonary tuberculosis are obtained when treatment is instituted before the bacillus has made its appearance, and this treatment should not be abandoned or relaxed even when the microscope negatives the diagnosis based on subjective symptoms and the knowledge gained by percussion and auscultation. During the last six months I succeeded in restoring a patient to health in whom a learned physician denied the existence of consumption, because he could find no bacilli. I have seen a patient die of tuberculosis within the last year when frequent examinations by the state bacteriologists gave negative results. I experienced the greatest sorrow of my life because two competent bacteriologists gave negative reports in my daughter's illness. I had diagnosed consumption; but, accepting the dictum of the time, "No bacilli, no tuberculosis," my efforts were relaxed and mourning and sorrow followed.

From these facts and hundreds of others which could be adduced it is obvious, I think, that it is better for the physician and safer for the patient to rely on the evidence gained by close observation, trained special senses and accurate knowledge of the symptoms of disease than to pin his faith solely to the revelations of the test tube, the *x*-ray or the microscope. These last have their uses in confirming opinions already formed or in causing us to reject opinions based on insufficient evidence, but they should not supplant the old and long-tried methods of investigation.

The tendency of the age is to extol the new and decry the old. A new fad or fancy propounded in a modern postgraduate school is seized with avidity, and too often influences practice to the detriment of the patient and the injury of the profession. As proof of this I might instance the indiscriminate use of the coal-tar preparations in recent times. I have seen them used with fatal effects in pneumonia, typhoid fever, smallpox, measles, diphtheria and septicemia.

IS THE ART OF MEDICINE DECLINING?

The practice of medicine is but the exercise of common sense, educated by acquisition of the learning and experience of our predecessors, fostered and strengthened, but not displaced, by modern methods. A knowledge of the functions of all the organs of the body is the first requisite. A knowledge of their derangements is the second, and a knowledge of the best methods of restoring them to their normal condition is the third and last, but not the least, in importance. Is our art improving or declining in that last most important particular?

I am saved from the necessity of answering this question by the timely publication of an address by Dr.

Billings[1] and the symposium on the proprietary medicine and the nostrum evil before the Chicago Medical Society.[2] To these articles I would direct the attention of all who are practicing medicine and prescribing remedies not in accordance with the teachings of the standard works on therapeutics and the directions of the Pharmacopeia, but in accordance with the literature supplied by the manufacturing chemists and the wise (?) and confident instructions of their traveling salesmen. Wisdom and experience which has not been gathered within the last decade is seldom accredited. Unless the views of the great authorities, like Watson, Austen Flint, Sr., Sir Astley Cooper or Valentine Mott, are reinforced by the teachings of some postgraduate professor or other evanescent luminary, their great names would soon pass into oblivion. The commercial instinct of some manufacturer might save them from such a fate by attaching their names to the recommendation of a nostrum or to a "patent medicine" advertisement. This growing disposition to ignore experience, together with the modern craze for bacillus hunting, and the manifest ambition of so many young practitioners to become great surgeons, even when they could not differentiate a dermatitis from smallpox, or measles from chickenpox, are, I think, among the causes which lead so good an authority as Sir Dyce Duckworth to say: "The art of medicine is fast declining."

The Incompetent Diagnostician.—This opinion is incidentally confirmed by Dr. Frank Billings,[1] of Chicago, who says:

> A large number of the medical profession do not practice medicine rationally. They have no clear conception of disease process. They do not study and examine the patients. No diagnosis is made at all or only from subjective conditions. Symptoms are treated. Headache, backache, indigestion, albuminuria, cough, constipation, dysmenorrhea, insomnia, nausea, dyspnea, etc., all call for drugs with no attempt to get at underlying causes.

This unscientific, not to say irrational, tendency is fostered, if not engendered, by the vast number of nostrums "strictly ethical" advertised extensively in medical journals and forced on the attention of the profession daily by those who make their living and the fortunes of their employers out of our credulity. Thus, we have headache tablets, cystitis tablets, gonorrhea tablets, dyspepsia tablets, heart tonics, liver tonics, etc., etc., besides medicines with the many uses of Frelich's tonic, for instance, which is advertised to cure "paralysis, vertigo, epilepsy, Bright's disease (early stages), neurasthenia, debility, debilitating losses, mental failure, spinal weakness, nervous dyspepsia, all trouble affecting the brain nerve centers and spinal cord, and as a safe and powerful aphrodisiac." These specifics or antidotes to so many diseases are, I fear, becoming antidotes to thought and reasoning and observation, which are the essential qualifications of the medical practitioner.

LOSS OF LOVE AND ESTEEM OF PATIENTS.

The art of medicine is, I think, declining also in the very essential element of winning and holding the love and esteem of our patients. Without this love and esteem we can not exert the psychical influence so essential in sustaining the hopefulness and fortitude of the suffering and afflicted. An important function of the family physician is to amuse and support the spirits and hopefulness of the patient, so as to give Nature the best opportunity for curing the disease.

1. "The Medical Profession and the Medical Journals in Relation to Nostrums," published in THE JOURNAL A. M. A., March 10, 1906, pp. 715-719.
2. THE JOURNAL A. M. A., May 5, 1906, pp. 1333-1345.

It is unlikely, I think, that the waning affection of the people for their family physician is caused by the want of assiduity or the lack of interest of the medical attendant. No one except the patient and his family is so deeply interested as the physician. No one gives the thought and endures the anxiety which he does; and yet it can not be denied that the gratitude and affection which he once received is not given with the ungrudging generosity with which it is given to the trained nurse. The payment of the fee, or the refusal to pay, discharges the obligation to the physician, and gratitude, if any is bestowed, assumes the form of a "lively sense of benefits to come."

The best years of his life may be given in the most self-sacrificing manner to the service of the people of any community and his departure will bring no manifestations of appreciation. His skill and motives may be questioned by those he has benefited, without their being told, in the words of Whitcomb Riley, that they are "the most ungratefull'est of men." The oldest and most painstaking physician may die and there will be no general manifestations of sorrow to equal that described by Will Carleton:

> There's a gathering in the village, that has never been outdone
> Since the soldiers took their muskets to the war of '61;
> And a lot of lumber wagons near the church up on the hill,
> And a lot of country people, Sunday-dressed and very still.
>
> But perhaps it still is better that his busy life is done;
> He has seen old views and patients disappearing, one by one;
> He has learned that death is master both of Science and of Art;
> He has done his duty fairly, and has acted out his part.
>
> And the strong old country doctor,
> And the weak old country doctor,
> Is entitled to a furlough for his brain and for his heart.

What are the causes for this waning affection? Is it that we fail to bring the philanthropic aspect of our labors before the notice of the public? We do not parade our philanthropy, but let a great calamity, like the San Francisco horror or even the Pomeroy cyclone, come on us and the services of the whole profession will be given gratuitously. Is it not possible that the personal services which we once rendered and which are now relegated to the trained nurse had much to do with cementing the bonds of friendship between ourselves and our patients?

Perhaps our devotion to science and our desire to ascertain the cause of suffering lead the friends to surmise that our interest is greater after the death of their loved ones than it was before. It may be that our delay in reaching conclusions and not applying remedies until we have exhausted the resources of science in discovering the cause of the symptoms leads them to think that we are more interested in the scientific aspect of the case than we are in the welfare of the patient.

However this may be, let us remember that our mission is to save life when possible, prolong it when we can, and, if we can not cure, to alleviate pain and suffering, to "soothe the pillow of the dying and smooth the pathway to the grave."

> "This be our task: Henceforth our path is straight,
> Wherever anguish is, or grief, or pain
> There be our places; Then let us do our part,
> Striving to antidote death's deadly bane
> By our divine and ever-blessed Art."

Treatment of Obesity.—P. H. Sunde, Los Angeles, in the *Southern California Practitioner*, declares that to give medicines in obesity and to disregard the diet and other modes of living, is simply ridiculous. Medicines at best, he states, must only be regarded as secondary measures.

Original Articles

THE DIETETICS OF OBESITY.*

ALFRED C. CROFTAN, M.D.
CHICAGO.

The reduction of obesity is an important therapeutic task, not so much when considered in the light of a tribute to the vanity of the afflicted, but when regarded as a necessary step toward removing adipose tissue that is producing disagreeable or dangerous complications about important organs, notably the heart and arteries, the bronchi, the digestive apparatus and the nervous system. It will often be found that these complications only disappear when the fat is reduced. We see here similar conditions as in diabetes, where, too, many of the complications rapidly disappear when the sugar is reduced; whereas in diabetes, however, the causes that determine these complications are chemical, in obesity they are mechanical in character.

The methods at our disposal for reducing obesity are chiefly dietetic. Second in importance is the regulation of the muscular exercise. These two means, singly or combined, usually suffice to accomplish the desired purpose, for with a decrease of the intake of fat-forming pabulum and an increase of its destruction by exercise the fat content of the body must needs dwindle. These measures may, to advantage, be enforced by certain hydrotherapeutic and medicinal means, the latter finding their chief sphere of application, however, in the symptomatic treatment of the complications of obesity.

One can conveniently distinguish three degrees of obesity that have been aptly characterized by a German writer as the enviable, the comical and the pitiable stage, the first presenting itself as a pleasing rotundity, the second as a jovial embonpoint of the Falstaff type, the third as a sad, unwieldy and, to our Caucasian tastes, disgusting deformity. Each of these three forms requires particular treatment. In the first form no attempt need be made to reduce the amount of fat, but every effort should be put forward to prevent its further development, particularly if premonitory signs of complications about the thoracic or abdominal organs begin to make their appearance. In the second and third forms, however, it becomes necessary to institute more or less energetic restrictions with the object in view of causing a loss of fat.

The laity and many physicians to this day direct their attention chiefly to the quality or the preparation of the food in reducing obesity. Certain articles are said to form fat and others not. This idea is erroneous. Broadly speaking, carbohydrates and fat foods should be reduced, and not the albumins. This rule is to be observed not because albumin forms less fat than carbohydrates or fats, but because the reduction of the albumin below certain normal average requirements, as will be explained below, is a dangerous and precarious procedure, whereas the fats and carbohydrates can be much reduced without much detriment to the individual.

One may say broadly and with certain reservations that will be presently discussed that any article of food can form fat, according to its caloric value; that the introduction of more calories either in the form of albumins or fats or of carbohydrates than are required to maintain normal nutritive equilibrium may lead to the deposit of fat in the tissues, whereas the introduction of less calories leads the organism to promptly attack chiefly its fat reserve to make up the caloric deficit.

THE SCIENCE OF REDUCTION CURES.

The first step, then, in instituting a reduction cure should be to determine the normal caloric requirement of the individual, assuming that he were not obese. This can be done by consulting the following table on which will be found the normal average weight for individuals of a certain height, both men and women:

Age (Years)	Men		Women	
	Height (In Meters)[1]	Weight (Kilogrammes)[1]	Height (in Meters)	Weight (Kilogrammes)
0	0.5	3.2	0.49	2.91
1	0.7	9.45	0.69	8.79
2	0.77	11.34	0.78	10.67
3	0.86	12.47	0.85	11.79
4	0.92	14.23	0.92	13.00
5	0.99	15.77	0.98	14.36
6	1.05	17.24	1.10	16.01
7	1.11	19.10	1.15	17.54
8	1.16	20.76	1.18	19.08
9	1.22	22.65	1.19	21.36
10	1.28	24.52	1.25	23.52
11	1.33	27.1	1.30	25.7
12	1.39	29.8	1.35	29.8
13	1.44	34.4	1.40	32.9
14	1.49	38.8	1.45	36.7
15	1.55	43.6	1.49	40.4
16	1.59	49.7	1.54	43.6
17	1.63	52.9	1.56	47.3
18	1.66	57.9	1.56	51.0
20	1.67	60.1	1.57	52.3
25	1.68	62.9	1.58	53.3
30	1.68	63.7	1.58	54.3
40	1.68	63.7	1.58	55.2
50	1.67	63.5	1.53	56.2
60	1.63	62.9	1.52	54.3
70	1.62	59.5	1.52	51.3

By multiplying this weight by 30 to 35[2] the approximate caloric requirement can be obtained.

Assuming that the patient were 1.7 meters tall, then, according to the table he should weigh about 61 kilos and would normally require about $61 \times 35 = 2{,}135$ calories a day.

The diet should now be arranged in such a way, with the aid of tables giving the caloric value of different articles of food, that this number of calories is furnished, and not more nor less. This constitutes the mildest form of underfeeding, the caloric intake being insufficient only relatively, i. e., as compared to the abnormal bulk of the patient. If the patient does not lose weight on such a diet containing the full normal caloric requirement, then it is necessary to reduce the caloric intake still further.

THE THREE DEGREES OF REDUCTION CURE.

It is convenient in obesity, as in diabetes, to arrange three degrees of reduction cures. In the first degree the caloric requirements are reduced to 4/5 of the normal, in the second to 3/5, and in the third to 2/5. Calculating this for an individual, e. g., requiring 2,500 calories as the normal, the first degree calls for the administration of foods possessing a caloric value of about 4/5 of 2,500 or 2,000, the second 3/5 of 2,500, or 1,500, and the third.

* Read before the Section on Medicine of the Illinois State Medical Society, Springfield, 1906.

1. One meter = 39.37 inches or 1 yard 3 1/3 inches (English). One Kilogramme = 2 lb. 3 oz. 2 dr. (avoirdupois).

2. For measuring the nutritive value of the different classes of foods, the term "calorie" has been imported from the realm of physics. A calorie is that amount of heat that is needed to raise the temperature of 1 kilo of water 1 degree (Celsius). Each article of food, it has been found, in process of metabolism (i. e., of assimilation, oxidative disassimilation and elimination) in the body generates a definite quantity of heat, or the mechanical equivalent of this heat in labor. Expressed in calories:

1 gr. of proteid furnishes.....4.1 cal.
1 gr. of carbohydrate furnishes.....4.1 cal.
1 gr. of fat furnishes.....9.3 cal.

It has further been determined that a normal adult requires from 30 to 35 calories a day per kilo of body weight, and that these calories can be furnished by any one or all of the three classes of food vicariously. (Croftan: Clinical Urinology, page 73.)

of about 2/5 of 2,500, or about 1,000. The popular cures of Banting, Oertel, Epstein, Hirschfeldt and others possess a caloric value lying between 1,100 and 1,600 only; they are consequently reduction cures of the third degree and, as will be presently shown, usually far more severe than is safe or necessary.

The rapidity with which fat is lost in these three degrees of reduction cures varies.

In the first degree the loss is usually very slow, the patients rarely losing more than two or three pounds a month, and even this slight reduction can only be accomplished if they indulge at the same time in considerable physical exercise. This four-fifths diet is useful chiefly in preventing the further increase of fat in subjects who are showing a tendency to obesity. It is eminently suitable for continued use and does not require any great sacrifice on the part of the patient. It is hardly ever necessary to calculate the caloric value carefully in this light form, for all one has to do is to allow meat only once a day, to reduce the amount of fat and starchy and sweet foods somewhat, to restrict or forbid alcoholic beverages, to give "filling" foods of small caloric value (see below) in abundance, to restrict the liquid intake to 1 to 1¼ liters of fluid a day, and to order abundant physical exercise.

The second degree is also particularly useful for continued use. It should be adopted (1) for very strong and very fat subjects who want to get rid of surplus fat and can safely indulge in very active physical exercise; (2) for individuals who are not only fat, but in whom complicating disorders about the heart, arteries, bronchi or digestive apparatus render it impossible to "work off" fat by exercise, so that the necessary reduction of the fat must be brought about in the beginning, i. e., until the complications improve or disappear, by dietetic restrictions alone; (3) for strong fat individuals who can not at once tolerate a third degree reduction cure without developing alarming symptoms of weakness, particularly about the circulatory and muscular apparatus; in the latter class of cases the three-fifths reduction cure is used as a transition diet to the third degree and is intended to gradually accustom the patients to restrictions of a more severe order. This second degree, too, leads only to relatively slight and slow losses of fat, more than six to ten pounds rarely being sacrificed a month.

The third degree, finally, is a rapid reduction cure. It must be carefully supervised and would best be carried out in an institution. Here we frequently find that the loss of fat is rapid in proportion to the obesity of the individual, showing that it is the surplus adipose tissue that is being sacrificed and not the albumins of the body. Combined with systematic exercise and drink restriction (see below) as much as thirty pounds a month can be lost with safety. A reduction cure of the third degree should never be carried out for indefinite periods, and six weeks is the longest time during which this serious restriction of the patient's nourishment should be allowed. In many cases the intermittent plan will have to be adopted, i. e., the patients are placed for four to six weeks on the rigid plan, then for a month or two on the second degree, and then back again to the rigid diet until the desired loss of flesh has been produced. It will be seen that here very similar principles are adopted as in the reduction of diabetic glycosuria.

While it is true that energetic starvation often rapidly leads to a loss of weight greater than that which can be accomplished by more gradual and more moderate means, such rapid reduction cures, as typified, for instance, by the Banting system, which is so popular among the laity, are rarely without serious danger to the various organs that are commonly involved in advanced degrees of obesity, nor are the results, broadly speaking, permanent. In very young people and in very old people rapid reduction cures should be altogether eschewed; for in children and in adolescent subjects irreparable damage is often done, growth stunted and serious complications engendered, whereas in old people the results are usually very unsatisfactory and never without danger, while the effects at best are exceedingly transitory.

THE ART OF REDUCTION CURES.

The question in regard to the kind of food that should be allowed in instituting any reduction cure and its mode of preparation has been the subject of much controversy for many years. The greatest care should be exercised, as mentioned above, not to attack the albumin content of the body; hence it is important to give the known minimum necessary to maintain adequate nutrition—and not less—to all cases in order that the patients may not be forced to consume the albumins of their proper tissues. This minimum lies somewhere between 60 and 80 grams a day, so that this amount, which corresponds approximately to 400 to 600 grams of lean meat, at least should be invariably supplied. No difficulty should ever be experienced in meeting this requirement. Notwithstanding the claim of some doctrinaires, excessive meat feeding is not only unnecessary, but may be directly harmful in instituting reduction cures. A great deal will depend on the tastes and the previous habits of the patients. If they have not been excessive meat eaters, there is no reason why they should be forced to eat much meat. If they have been abundant meat eaters, they may safely continue meat eating, provided the intake is not so large that the total caloric value of the food is increased above the prescribed and calculated limit.

The next question to decide is whether the carbohydrates or the fats are to be chiefly restricted. Here, again, a very virulent controversy has been going on for many decades. This is not the place to enter into a discussion of the merits or demerits of the different theories advanced. From a practical standpoint it is best to reduce the fats and to give relatively large quantities of such carbohydrate foods as possess bulk; for the latter, as a rule, incorporate a small caloric value, while, at the same time, fully satisfying the patient. The idea that fat forms fat in the body more than carbohydrate has been shown to be erroneous; carbohydrates, in fact, seem to be more readily deposited as reserve fat in the tissues than the fat that is eaten.

To summarize, therefore, the diet in reduction cures should be arranged in such a way that the individual receives an amount of albuminous food, incorporating at least 60 to 80 grams of albumin. This is necessary in order to maintain nitrogen equilibrium and to protect the tissue albumins. The remaining number of calories that are to be supplied may be vicariously furnished either in the form of fats or carbohydrates. Of the two the carbohydrates, however, especially if they are voluminous, should be given the preference.

The distribution of the meals is sometimes of importance. The best plan is to give three meals during the day and, in addition, two or three small meals between, the latter preferably consisting of articles like bouillon, coffee or a little fruit, that all possess a small caloric value. They serve the purpose of keeping the patient comfortable, avoiding disagreeable sensations of weak-

ness and gastric emptiness and at the same time preventing the patient from becoming too ravenously hungry at meal times and consequently overeating.

THE RESTRICTION OF LIQUIDS.

One other important principle must be observed in feeding diabetics, viz.: the liquid intake should be restricted. Nothing is easier than to rapidly reduce the weight of an obese subject by restricting the liquid intake to a minimum. This loss of weight becomes particularly apparent during the first four or five days of the cure. It is due, in the first place, to a direct loss of water from the tissues; in the second place, to the fact that an individual drinking very little water does not eat as much as one taking a normal amount of liquid. The restriction, therefore, in the beginning is a useful procedure more for physic that for physiologic reasons; for the patients, when they notice how rapidly they are losing flesh, acquire that confidence in the method that is so important if they are to carry out the more or less disagreeable and stringent orders that must be enforced. No permanent effects, however, are obtained from this restriction of liquids, and the patients regain the lost weight as quickly as they lost it so soon as they begin to increase water drinking. Nevertheless, even in cases in which the restrictions are to be continued for a long time, a reduction of the total liquid intake to about 1 to 1½ liters in the 24 hours is a useful adjuvant. It renders it easier for the patients to live up to their restrictions and it is also beneficial in advanced cases of obesity with complications, because it spares the heart and the kidneys. In cases, finally, that suffer from excessive sweating, the restriction of liquids is a very useful procedure to remove this disagreeable symptom.

SPECIAL ARTICLES OF FOOD.

Alcohol may be administered to obese subjects, provided the caloric value of each gram of alcohol is carefully included in the calculation. It should be allowed particularly in cases that have been accustomed to a little alcohol all their lives; for here withdrawal of alcohol is not only an unnecessary hardship, but may even constitute a source of danger, especially if a weakened heart is suddenly robbed of its accustomed stimulus.

In selecting meats for obese subjects, lean varieties should be given the preference. Lean meat contains about 20 per cent. of albumin and 1.5 to 2.0 per cent. of fat, so that 100 grams of lean meat, weighed raw, furnish about 100 calories. It is necessary, of course, that the meat should be prepared in a very simple way, i. e., it should be either stewed, roasted or broiled. All meats that are prepared by frying or served as ragouts or with bread crumbs, sauces and gravies contain incalculable amounts of fat, so that their caloric value may assume very large proportions. It is always best, therefore, to forbid the use of any but lean meats, plainly prepared.

Among the animal foods that an obese subject can eat with impunity are a number of delicacies that are taken only in small quantities and, on account of their flavor, are very agreeable additions to the diet; thus, according to a table published by von Noorden, 100 calories are contained in:

45 grams of caviar.
40 grams of sardines.
100 grams of boiled lobster.
160 grams of crab meat.
120 grams of oysters (equal to about 14 to 18 oysters of medium size).
25 grams of paté de foie gras.

Cheese also serves a useful purpose, for, taken even in very small quantities, it is very filling. Thus Swiss cheese, American cheese, Cheddar and Chester cheese contain about 28 per cent. of albumin, 30 per cent. of fat and 2 per cent. of carbohydrate, and 25 grams of these cheeses furnish about 100 calories.

Milk is a very useful addition to the bill of fare of obese subjects, provided its caloric value and the water it contains are included in the calculation. One hundred c.c. of milk furnish about 60 calories. This amount can safely be allowed with tea and coffee. Buttermilk is still more useful, for 100 c.c. of this only contain from 40 to 45 calories and a whole quart about 250 calories.

Thin soups and bouillon and beef tea are exceedingly useful articles, for their caloric value is practically 0. They are filling, they taste well, and the patient eating a large plate of bouillon imagines that he is getting something of value to eat.

Rich sauces, as stated above, should be absolutely forbidden, because they are made of large quantities of fat, flour, eggs, so that their caloric value can hardly be calculated. Articles made of flour or rice, like noodles and macaroni, puddings, etc., should not be allowed in the strict reduction cures. In the second and third degrees, however, small quantities may be permitted as a relish. If they are given, each tablespoonful of these articles should be figured as representing about 30 calories.

Potatoes are also permitted, provided they are given in small quantities and are either baked, boiled or mashed. One hundred grams of potatoes contain about 1.5 per cent. of albumin and 18½ per cent. of carbohydrate and possess a nutritive value of 80 calories.

Among the vegetables, those varieties that grow underground as well as those that grow in pods should be forbidden or restricted, because they contain very large and varying amounts of carbohydrates. If they are permitted at all in the lighter reduction cures, their caloric value should be carefully determined. All the other vegetables are exceedingly useful articles of diet in obesity, for they possess a very small caloric value in proportion to their bulk and consequently fill the stomach and rapidly produce a sense of satiety; incidentally they act favorably on the function of the bowel. They should be served only boiled in salt water, without the addition of cream, butter, flour, etc. If flour or fats are used in preparing vegetable dishes, the amounts should be carefully weighed and their caloric value considered.

Fruits of all kinds, with the exception of bananas, sweet grapes, figs, dates, raisins, are permitted without reserve; they, too, are very filling and act well on the digestive apparatus and constitute a great relish without, at the same time, possessing a high caloric value. About 100 calories are contained in 220 to 250 grams of fruit.

The use of bread is permitted in obesity, only, however, if the bread is carefully weighed and its caloric value considered. Here the same rules obtain as in the feeding of bread to diabetics, i. e., those varieties that are made of vegetable albumin (gluten breads, aleuronat bread, etc.) are particularly useful if they are baked so as to become fluffy and voluminous, for they satisfy the eye and the mind and are filling without possessing a very large caloric value.[3]

3. Most so-called diabetic breads contain approximately 50 per cent. of carbohydrate. The vegetable albumins (aleuronat, roborat, plasmon, gluten) all contain about 5 per cent. of carbohydrate. These breads are made from such flours plus a certain amount (one to four parts) of ordinary flour. They should, hence, only be used as an equivalent for white bread in the proportion of about 4 to 1. Their indiscriminate use, which is so popular among the laity, who imagine that these breads can safely be taken ad libitum, is, therefore, to be condemned as dangerous. They fulfill a useful purpose, however, owing to the fact that much more of the various diabetic breads can be eaten as of ordinary white or rye bread and still no greater amount of carbohydrate be administered.

A great many mineral waters enjoy deserved popularity in the treatment of obesity, notably the waters of Kissingen, Vichy, Homburg, Carlsbad and Mariensbad. It is a futile task, however, to attempt the reduction of obesity by the use of these waters alone. It is possible, of course, by producing profuse watery diarrhea with the aid of these waters to cause a considerable loss of water from the tissues and hence a reduction in the weight of the patient. This practice is of some use for psychologic reasons, because the rapid loss of weight in the beginning of the treatment makes a great impression upon the patient and renders him more willing to follow directions later on. The indiscriminate use of mineral waters is, however, to be condemned; for if the diarrhea is allowed to persist too long the effect is without doubt weakening, and this practice, moreover, especially in obesity, reacts unfavorably upon the blood pressure and the heart.

These patients, it is true, do very well, as a rule, in resorts in which these waters are taken, but the effects are to be attributed only in a very small part to the drinking of the particular water (witness the indifferent effects obtained from the use of these waters of salts at home) and in much greater part of the careful and strict regulations in regard to exercise,[4] general mode of life and diet that the patients undergo much more willingly and conscientiously at a watering place than at home. Fully as useful, probably safer, and by all means cheaper is the treatment of obesity in an institution where a like control can be exercised over the patient's diet and habits.

100 State Street.

TREATMENT OF PROGRESSIVE ATROPHY OF THE OPTIC NERVE DUE TO ACQUIRED SYPHILIS.

BY SUBCONJUNCTIVAL AND INTRAVAGINAL INJECTIONS OF SUBLIMATE OF MERCURY.*

CHARLES STEDMAN BULL, A.M., M.D.
NEW YORK.

The treatment of syphilitic atrophy of the optic nerve is a subject which taxes all our patience and ingenuity. So universally unfavorable is the prognosis that the ophthalmic surgeon is ready to grasp almost any means which promises a solution of the problem. All surgical interference with the optic nerve itself, such as incision of the nerve sheath in several places, or elongation of the nerve by stretching, has yielded such imperfect and inconstant results that it can not any longer be recommended and has been abandoned. The same may be said of sympathectomy, which has so recently been vaunted as a remedy for atrophy. The constant current, and even static electricity, have been faithfully tried and have usually proved unavailing. Much has been claimed for the treatment by vibratory massage, but I have never personally known of a case of atrophy which has been permanently, or even temporarily, benefited by this method.

In advanced cases of syphilitic atrophy of the nerve I believe mercury administered internally to be useless, and it may do real injury. Roborant treatment, directed to the general health, in these cases sometimes aids in retarding the degenerative process.

As we all know, there are clinically several forms of atrophy of the optic nerve: the partial, the total, the stationary and the progressive. The cases of partial atrophy are generally stationary. The instances of progressive atrophy met with in syphilitic patients are the most unfavorable. These cases are always bilateral, and the pupillary disturbance, or loss of reflex action of the iris, is often observed within the first year after infection has occurred, and may, therefore, be regarded as a warning of impending atrophy. It may accompany beginning optic atrophy before the loss of sight is sufficient to explain it. The evolution of an optic atrophy is very irregular, and total blindness is often complete in one or two years, though occurring usually sooner in one eye than the other; and some central fibers may remain intact during the remainder of the patient's life. It is in this small minority of cases that we are prone to attribute the arrest to whatever method of treatment we are at the time employing. It is impossible to say how many of these cases of arrest of the degenerative process are due to the treatment adopted, and a therapeutic effect can only be expected when the optic nerve fibers have been merely compressed by the hypertrophy of the connective tissue framework of the nerve.

USE OF SUBLIMATE INJECTIONS.

Subconjunctival sublimate injections have been employed in the treatment of optic nerve atrophy by various authorities, but hitherto with but little success.

Darier is probably correct in saying that they are contraindicated for the time being whenever the absorption of the fluid by obstructed lymph-channels is rendered difficult or impossible by a circulatory stasis, for in such cases they are irritating and more harmful that useful. It is going too far, however, to say that as an anti-syphilitic method subconjunctival sublimate injections have a rapid and intense action on specific ocular manifestations at all stages, for in most of the chronic cases of deep-seated eye trouble, notably of the optic nerve, this does not hold true. The statement that the chief contraindication to subconjunctival injections lies in an engorgement of the circumcorneal circle of vessels is true only of the lesions of the anterior parts of the eye, and does not apply to optic nerve atrophy.

The subconjunctival injection of the various salts of mercury is more or less painful, the cyanid being the most so. In endeavoring to prevent or diminish the pain of mercurial injections do not add a solution of cocain to the sublimate solution, for the cocain is decomposed at once. Akoin lessens the pain, but is precipitated by the least alkalinity of the solution. It is better to inject a few drops of a 5 per cent. solution of cocain under the conjunctiva five or ten minutes before the sublimate injection is made. If akoin is used a 1 per cent. solution is of sufficient strength.

---

4. The element of muscular exercise is second in importance only to the regulation of the diet in obesity. It can readily be calculated that a certain amount of muscular exercise causes a loss of a certain amount of fat. Oertel, who has studied, more than anybody else, the effect of graduated exercise, especially graduated hill climbing, on obesity and the action of the heart, based his original recommendations on definite calculations as follows: Assuming that a man weighing 60 kilograms ascends an elevation each day of 100 meters, then the labor performed is equal to $60 \times 100 = 6{,}000$ kilogrammeters; as a matter of fact, much more energy is expended, for the external labor produced represents only about 30 per cent. of the total energy developed; thus such an individual in a day develops fully 20,000 kilogrammeters of energy. As 425 kilogrammeters of muscle work require 1 calorie, 20,000 kilogrammeters require 47.06, and this amount of caloric value is furnished by $\frac{47.06}{9.3} = 5.06$ of fat. It will be seen, therefore, that such an individual must consume 5.06 of body fat to raise his body 100 meters. It is immaterial, of course, according to the laws of the conservation of energy, whether or not this elevation is reached within a short time or within a long time, by a vertical path or by a long series of inclined paths.

* Read in the Section on Ophthalmology of the American Medical Association, at the Fifty-seventh Annual Session, June, 1906.

Zossenheim[1] has used injections of sublimate in many cases of optic nerve atrophy, but reports not a single case of encouraging results.

Dufour prefers sublimate to cyanid of mercury, of the strength of 1 to 3,000, and never injects more than half a syringeful. He keeps his patient in bed for two days with both eyes bandaged. If there is no improvement after the eighth injection he gives up the treatment.

Senn[2] prefers the cyanid of mercury to the sublimate in cases of optic atrophy, but reports no favorable results.

METHOD OF TREATMENT.

The principles of subconjunctival injection laid down by Darier would apparently apply only to the anterior segment of the eye, and their effect on the aqueous humor through Schlemm's canal and Fontana's space. If, however, the efficacy of subconjunctival injections depends on the absorption of the injected substances, the moment an isotonic equilibrium is established, there is no reason why this condition may not be induced in the posterior channels of filtration by subconjunctival injections far back of the equator of the eye, and thus an effect be produced theoretically on the optic nerve. These posterior injections must not be made near the limbus, nor too deep under the conjunctiva, where the capsule of Tenon is intimately attached to the sclera. In making the injections it is better first to incise the conjunctiva and separate it for some distance from the sclera by a strabismus hook and then introduce the needle far back, hugging the sclera, and inject slowly. There is less pain from the injection if the episcleral tissue is not injured.

I use a Pravaz syringe with a fine needle of iridised platinum, which can be sterilized by passing it through a gas flame. The liquid to be injected must be sterilized by boiling and allowed to cool to blood temperature and is then injected. The injection is made in the superotemporal region, tangentially to the sclera, and the liquid must not be allowed to extend toward the limbus. Hence the value of dissecting the conjunctiva from the sclera in the direction backward toward the optic nerve entrance before the injection is made.

This method of treatment was carried out on twenty-five cases of progressive atrophy of the optic nerve, due to constitutional syphilis. They were cases of simple atrophy and were not preceded by any intraocular signs of papillitis or neuritis. They were all private patients under my own care until the treatment was abandoned as useless. They had all been subjected to one or more full courses of thorough anti-syphilitic treatment by skilled syphilologists, which had been carried out for a varying period from one to two years, or until no constitutional symptoms had appeared for some time.

The presence of tabes or disseminated sclerosis was so far as possible excluded.

Before the treatment by subconjunctival injections was begun the patients were subjected to a course of strychnia by hypodermic injections, pushing the dose of the drug to the extreme of toleration. In every case the observations, the testing of the vision and the visual field were made by myself. Some of the cases had been previously treated by the interrupted current and by static electricity by other physicians, and two of them had undergone a prolonged treatment by vibratory massage without any benefit.

The shortest interval between the occurrence of the initial lesion and the first failure of vision was two years, and the longest interval was twenty-three years. From investigations made by Januskiewicz, covering many cases, it has been found that the shortest interval in any reported case between the contraction of the disease and the failure of vision was six months, and the longest was twenty-nine years. The failure of vision occurred most frequently from five to ten years after the appearance of the chancre.

RESULTS OF TREATMENT.

In none of the cases was there any permanent improvement of the vision by the treatment noted, and in only three was there any temporary improvement. In no case did the injections cause any acceleration of the loss of sight.

In three cases, besides the subconjunctival injections, an intravaginal injection was made directly into the sheath of the optic nerve. For this purpose the tendon of the external rectus muscle was divided, sutures were introduced through the tendon so as to allow of its reattachment to the eyeball, and the muscle was then drawn upward and outward away from the wound. The conjunctiva was then carefully separated from the sclera as far as the apex of the orbit by strabismus hooks, and the optic nerve was drawn forward by a blunt hook. The sheath of the nerve was then grasped by a pair of fine forceps and lifted up, and the needle was pushed through the sheath parallel to the nerve, and the injection was made. The tendon of the muscle was then stitched to its former line of attachment to the sclera, the conjunctival wound was closed by a suture, and both eyes were bandaged for two days.

The vision existing in the two eyes of the several cases at the time the treatment was begun varied from light perception in both eyes as the lowest to 15/200 in both eyes as the highest. The injections were made at intervals varying from one week to every second day, and in the cases in which both eyes were seriously affected the injection was made in one eye, and at the next visit in the fellow eye. If there was no improvement after the tenth injection the treatment was abandoned. The drug used in every case was a solution of sublimate, beginning with 1 to 5,000 and increasing the strength of the solution to 1 to 2,000. The first injection consisted of 10 minims, and the dose was gradually increased until 20 minims were injected, and this dose was never exceeded. Each injection of the sublimate was preceded by an injection of 5 minims of a 5 per cent. solution of cocain, and in this way the pain was reduced to a minimum, and never lasted more than 5 or 6 minutes, and was characterized by the patient as a burning sensation. After the injection the eye was not bandaged, but cold applications were made to the eye until the burning sensation subsided. In no case was the injection followed by any marked signs of irritation, and the swelling of the subconjunctival space rapidly subsided under the influence of the cold applications.

The temporary improvement in the vision in three of the cases lasted but a short time. In one case, a man, aged 46, the left eye was entirely blind, while the right eye V.=5/200. After the sixth subconjunctival injection and one intravaginal injection the vision rose to 15/70 and remained so for five weeks. It then slowly grew worse, and in three months from the date of the last injection it was reduced again to 5/200. In the second case of improvement, V.=15/200 in each eye. After the sixth subconjunctival injection and one intravaginal injection in the right eye the vision of the right eye rose to 15/50—the left eye remaining unchanged; but the improvement lasted only four weeks and then

1. Deutschmann's Beiträge, vol. xv, p. 41.
2. Arch. f. Aug., 1904, p. 232.

rapidly sunk to 15/200. In the third case of improved vision the right eye was entirely blind and the left eye could count fingers at three feet. After ten subconjunctival injections and one intravaginal injection in the left eye the vision of the left eye rose within a few hours from counting fingers to 15/70 and the field was perceptibly widened. This patient lived in Texas and returned home two weeks after the last injection. He reported that the improvement of vision lasted four months and then rapidly subsided, so that three weeks later it was reduced to perception of light.

CONCLUSIONS.

1. Posterior subconjunctival injections of sublimate may be given with but little pain if the sublimate injection is preceded by the injection of cocain.

2. The conjunctiva should be incised and carefully separated from the episcleral tissue, and the injection made far back toward the apex of the orbit.

3. The eye need not be bandaged after the injection, but cold applications should be made for half an hour.

4. This method of treatment of cases of atrophy of the optic nerve has, in my hands, proved of no more value than the usual routine treatment by mercury, potassium iodid and strychnia, and offers no encouragement for its continued use.

DISCUSSION.

DR. S. D. RISLEY, Philadelphia, said that the result of Dr. Bull's persistent experiments are negative and congratulated Dr. Bull on having the courage to announce such a result. He said that this is commendable and that he wished other experimenters had the courage to do the same in the case of similar results. Viewed from the standpoint of physiology and from what we know of the physiologic methods by which subconjunctival salt injections act, the result, Dr. Risley said, was an *a priori* conclusion. He is an advocate of subconjunctival salt injections; he has seen them do a great deal of good in diseases of the anterior segment of the globe and has many times seen the entire uveal tract clear up under the action of repeated, prudently made, subconjunctival salt injections. He said that by that he did not mean solution of mercury, but the so-called physiologic saline solution. He has never, however, seen any good effect from the deep injection of this or any other solution. He called attention to a point made by Dr. Bull, that in making these deeper injections we must go outside the capsule of Tenon and not into it. When we consider the peculiar anatomic arrangement of the optic nerve, how Nature by means of the dural sheath of the nerve, the curious complex arrangement between it and the pial sheath, the intricate arrangement of the blood vessels and the peculiar arrangement of the lymph spaces of the eye, we see how little is to be expected from deep injections. Dr. Risley does not know how salt injections do good. He does not believe, for example, that the law of osmosis and endosmosis has very much to do with it. He first supposed that that was the way in which it did good. He stated in a paper presented before this Section last year that it was simply the dilatation of the lymph spaces, with a fluid of proper specific gravity, thus permitting a freer current, as it were, and emptying the corneal lymph spaces, which were again filled by normal processes. He believes that all the good we can ever hope to accomplish from these salt injections must be by this method through the anterior lymph spaces of the eye, and that deeper injections are simply useless or harmful. He used them at first very extensively in his endeavor to cure that hopeless condition, detachment of the retina, but without results. How many of us, he asked, have not witnessed, day by day, this chamber of darkness gradually close around these patients with optic nerve disease while we sat sad and helpless, and who of us will not commend any procedure that brings a ray of hope? It is like casting one's fly into a quiet, currentless and fishless pool, where, however skillfully done, there must be disappointment, but we must conclude to accept many clinical disappointments in our efforts.

DR. A. A. HUBBELL, Buffalo, stated that he had had some experience along this line, though not so systematically persisted in as by Dr. Bull. These lamentable cases, he said, deserve all the attention we can give and if there is the slightest hope held out by anyone we are all disposed to grasp it. Some years ago he began the use of the subconjunctival injections and among others he experimented with this disease. His experience, like that of Dr. Bull's, has been entirely negative. Dr. Hubbell rather expected such results from the fact that he believes that we must look further than the eye itself for the cause of the disease. He has not felt that it is necessary to adopt the surgical measures that Dr. Bull has done in giving the injections. Dr. Hubbell has endeavored to place the sublimate solution beneath the capsule of Tenon by grasping the episcleral tissues with the forceps and then passing the needle underneath the tissues held up. In that way he has succeeded in putting the solution well back. He thinks that these negative results are as valuable to the profession as results which are more favorable.

DR. GEORGE DE SCHWEINITZ, Philadelphia, said that our judgment of the value of any therapeutic measure is always greatly enhanced when we have a carefully diagnosticated series of cases to deal with. He has had no experience in the treatment of these cases with this method and asked Dr. Bull whether he believes this method persisted in in the manner and according to the technic he has described is more efficient than the ordinary method of giving subconjunctival injections in other conditions. Dr. de Schweinitz has given many hundreds of subconjunctival injections with all suitable substances, and with most satisfactory results in various diseases of the uveal tract, the cornea and the sclera, but he is willing to follow Dr. Bull's technic if it is more efficient.

DR. CHARLES S. BULL, New York, in reply to Dr. de Schweinitz, said that if any effects are to result from this method of treatment on the condition of the optic nerve, the injections must be made, not anteriorly, but posteriorly. He had made a great many injections as he supposed posteriorly by simply grasping the conjunctiva and thrusting the needle through as far back as he could. Whether he is less skillful than others he does not know, but in every one of those cases he caused a great deal of pain to begin with, and the tendency of those injections was for the fluid injected to drift toward the anterior segment of the eye, in the circumcorneal spaces. When he first thought of opening the conjunctiva with scissors and separating it carefully as far back sometimes as the entrance of the optic nerve he found that the injection showed no tendency to come toward the anterior segment, but remained posteriorly where he wanted it. He has not found that these injections posteriorly had any more efficiency in producing favorable results on these conditions than those made in the anterior portion of the conjunctiva.

NEOPLASMS OF THE COLON.

REPORT OF SIXTEEN CASES.*

A. F. JONAS, M.D.
OMAHA.

Neoplasms of the colon, when compared with abdominal growths in general, are not common, still they are of sufficient frequency that they can not be left out of consideration when the surgeon is confronted by tumors of moderate size in any region of the abdominal cavity. When we take into consideration the wide range of mobility possessed by the colon, we at once must recognize the fact that position or location can be no determining factor in the diagnosis. These growths may be fixed in a given locality, which may or may not be at the

* Read in the Section on Surgery and Anatomy of the American Medical Association, at the Fifty-seventh Annual Session, June, 1906.

point of their origin and the normal locality of the organ bearing them. They may be very movable and occupy a position at a considerable distance from their initial stage by displacing the organ that harbors them. While these neoplasms are usually palpable, they may be concealed and can not be felt even after they have attained a considerable size and have brought about a complete intestinal occlusion.

While they usually begin as primary growths of the colon, they are not infrequently secondary and may have originated in the mesenterium or the appendix vermiformis of the uterus or its adnexa as will be seen from two cases detailed in this report. The primary growths may have developed so insiduously and pursued such a symptomless course as to be entirely unsuspected until by a hyperplastic inflammatory process they cause adhesions to the colon, having formed a vascular pseudomembrane between it and the neoplasm, the colonic wall rapidly becomes involved, gradually creating a narrowing of its lumen, with the frequent occurrence of sudden torsions and angulations, and occasionally when carcinomatous ulcerations extend into the outer intestinal tunic, the production of perforation ushering in a fatal peritonitis.

We must confess that physical signs alone are not sufficient to warrant a diagnosis. The history is of first importance and particularly a knowledge regarding certain functions.

PATHOLOGY.

Neoplasms of the colon present several varieties and in a general way we may designate, from a pathologic standpoint, two groups, viz., benign and malignant. In the first group we naturally place such connective tissue tumors as intestinal fibroma, lipoma, myxoma, and polypoids which appear as small nodular growths or as pendulous polyps. The latter occasionally produce intestinal obstruction and sometimes invagination. Myoma and multiple cysts have been met with.

Sarcoma of the intestine is extremely rare. Occasionally the solitary follicles of Peyer's patches may be at the seat of lymphadenoma or lymphosarcomatous enlargement, especially associated with leukemia or pseudoleukemia.

As an independent primary affection, round-celled sarcoma may spring from the submucosa and the deeper layers of the mucosa, sometimes extending to the mesentery. The mucosa and submucosa sometimes contains secondary sarcomatous nodules in considerable numbers and the peritoneal covering may be thickly infiltrated with miliary sarcoma points.

The malignant tumors of the intestine are chiefly of epithelial origin and under this caption must be counted not only carcinoma in all its varieties, but adenoma and inflammatory papilloma.

Chronic inflammations of the large intestine that result in inflammatory hyperplasia of the mucous membrane, sometimes terminate in papillomatous and polypoid formation of considerable extent.

While we can draw no sharp line between adenoma proper and inflammatory proliferations, the former, more strictly speaking, are tumors.

Adenomata may occur in the form of papillomatous cauliflower-like formations; or they may be found in the form of flat elevations of uneven surface and are prone to ulceration and hemorrhage.

Adenomata sometimes arise in the crypts of Lieberkühn in the duodenum of Müller's glands by an hyperplasia and in their makeup present typical glandular acini, a basement membrane containing cylindrical epithelium lining the tubules.

Adenomata are found sometimes in the colon, but more frequently in the rectum and rarely in the duodenum. Carcinoma is the tumor found most frequently in the intestine. It is observed most often in the colon and at the ileocecal juncture, at the flexures of the colon and least frequently in its descending portion. It is found sometimes in the duodenum, especially at the papilla of the common duct. More frequent than in all other parts of the intestine carcinoma is met with in the rectum.

Sutton collected 100 cases of carcinoma of the intestine. Of these 75 were located in the rectum, 23 in the colon and only 2 in the small intestine.

The collective reports of tables of autopsies published by Azeman, Maydl, Müller and Nothnagel, show an aggregate of 69,083 autopsies, of these 5,796 deaths were from carcinoma in general, about 84 per cent. Of the 5,796 deaths from carcinoma, 1.296 were in the intestinal canal, making 22.35 per cent. of all carcinomata. Thirty-five of these occurred in the duodenum and small intestine (2.7 per cent); 35 were in the cecum (2.7 per cent.); 131 in different parts of the colon (10.11 per cent.); three in the vermiform appendix (23 per cent.); 83 in the sigmoid (6.405 per cent.); 262 in the rectum (20.25 per cent.) (Hemmeter). It will thus be seen that 19.422 per cent. of all intestinal cancer occur in the large intestine if we include the sigmoid, nearly 80 per cent. of these occurring in the rectum.

Carcinoma of the colon presents an irregularly formed mass, containing hard and soft areas, often ulcerated especially within the intestinal lumen, which bleeds easily and projects into the gut, reducing its diameter and interfering with the fecal passage, or when the growth is girdle-shaped and surrounds the gut, which is its most characteristic form, its lumen is narrowed, interfering with fecal circulation. As the intestinal constriction becomes greater the colon above the point of stricture becomes greatly distended by the accumulating gases and fecal masses. The bowel below the obstruction becomes thinner and its lumen contracted. The distension may become so great as to produce rupture.

Carcinomata of the colon are, chiefly, cylindrical epitheliomata of glandular cancers, being made up of atypical acini and tubules, epithelial cells in masses which have irregularly proliferated and infiltrated the neighboring tissues. Occasionally these neoplasms have been found a clear transition of adenoma into carcinoma (adenocarcinoma). Thus transformation is not uncommon in tumors of the bowel.

Cancer of the large intestine is usually of primary origin, but rarely is it secondary, and when so it has spread to the intestine by contiguity from the omentum, stomach, uterus, ovary, bladder, prostate glands, vermiform appendix and lymphatic glands, or cellular elements may be transferred from other distant organs wherein a primary carcinoma may be undergoing disintegration.

Carcinoma of the intestine and particularly of the colon, occurs chiefly between the ages of 40 and 60 years, although these growths are sometimes observed earlier. Nothnagel records a case of carcinoma of the cecum in a boy 12 years of age; Schönig two cases of rectal carcinoma in girls of 17 years of age; and Clar reported a case of medullary carcinoma in a boy three years old (Hemmeter). Maydl has shown by material of the

Allgemeines Krankenhaus, in Vienna, that one-sixth of all intestinal cancers occur between the ages of 30 and 40 years and one-seventh occur before the thirtieth year, consequently it is not safe to exclude cases from a diagnosis of intestinal cancer on account of age.

Adhesions between the neoplasm and all organs may give rise to great misplacement of viscera creating great operative difficulties. Sometimes many loops of intestine have become adherent to each other as well as to the neoplasm and all of these to the bladder, uterus, ovaries, and omentum, creating an entanglement that is impossible to disentagle. Adhesions may create fistulæ between colon and intestine or bladder, occasionally perforations externally through the skin have been observed. A primary neoplasm may become so large as to occlude the intestine; in many instances such a growth may disintegrate, a portion of it slough away and the obstruction is relieved, to be followed by a constriction due to connective tissue formed in the place of the disintegrated portions. During a partial disintegration of such a growth, blood vessels become eroded and severe loss of blood may ensue. If the disintegration process extends to and through the peritoneum before agglutinative adhesions with adjacent parts have taken place, a fatal peritonitis follows.

SYMPTOMATOLOGY.

There is no disease of the intestine that in its early stages is usually so free from symptoms. It develops so slowly that its presence is unsuspected until more or less grave complications are manifest. Every practitioner can detail cases that have progressed to a point where a fatal termination was imminent from sudden bowel obstruction and yet no tumor was palpable because of its concealment under the left costal arch as in one of our cases. Others have been recorded and observed many times, where gradual emaciation, a cachexia and a gradually increasing constipation was the only warning. Again others with an unimpaired appetite and digestion, no loss in weight and the only manifestation the obstinate and aggravated bowel inactivity that gave cause for alarm.

The common early subjective indications are frequently recurring colic-like pains with circumscribed tenderness, unpleasant abdominal fullness due to accumulation of gas, with bowel inactivity alternated sometimes with diarrhea. These symptoms were present in nearly all of our cases. Particularly, the cramp-like pains that increased in severity and frequency until either a tumor could be palpated or bowel obstruction was complete. These colicky pains were more or less associated with abdominal fullness, tension and a point of tenderness.

The digestive functions were unimpaired, as one would expect in growths situated so low down in the intestinal tract, as the colon plays no important part in digestion or assimilation. These symptoms are not pathognomonic of malignancy nor do they indicate the presence of a tumor in any form. They seem to indicate that a more or less localized lesion exists which may be inflammatory or neoplastic. There is no justification for an absolute diagnosis of neoplasms of the colon, whether with or without the above symptoms, unless we can feel a tumor that seems to have no connection with other organs. The evidence becomes strong when gurgling of gas through the tumor is heard. The diagnosis becomes more certain when an obstinate and increasing constipation exists and it is usually quite certain when in the presence of a hard irregularly-shaped tender tumor, a bowel obstruction exists. The author has found in several of his cases a strong confirming evidence to the use of the stethoscope, frequently on auscultation a gurgling of air through that portion of the intestine in which the growth was located, could be heard. Another valuable aid consisted in air being pumped into the rectum through a long tube. The little jets of air could be heard through the stethoscope up to the point of partial or complete obstruction but not beyond.

In several of the cases when the bowel had become partially obstructed, the fecal column was flattened, compressed, stringly and spirally molded, sometimes the stool was dry and globular. But these signs can not be considered of much importance because a constricted sphincter ani might, in a measure, cause unusual forms of the feces. The stool, however, is often very offensive, owing to the disintegration of the neoplasm. The evacuations then may contain pus, mucous and blood in varying quantity, the hemorrhage being sometimes dangerously profuse. Care should, however, be exercised to ascertain if hemorrhoids in any form are existent. Occasionally particles of the growth are found in the evacuations, but usually escape detection. It is well, however, to examine the stools critically for such broken-off particles.

It is remarkable how long some of these cases can exist even after obstruction is complete. One of our cases was seen three weeks after the last evacuation. Th colon is susceptible of great enlargement, sometimes being so large that on first inspection after opening the abdomen, one is uncertain whether or not he is dealing with the stomach. The enormously dilated colon can accommodate an immense quantity of firm stool, the fluids having been reabsorbed.

DIAGNOSIS.

It is very important that frequently repeated palpation of the abdomen in suspected intestinal neoplasms be done in various positions, sometimes under an anesthetic. Rectal and vaginal explorations are important because the neoplasm may of its own weight have sunk into the pelvis or have been drawn out of place by adhesions. It must be remembered that neoplasms of the colon, in their early development, are apt to be round or oval, smooth and not very large, not large enough to cause the abdominal wall to project. Later they become uneven and irregular in shape and sensitive. If located in the transverse colon a distinct aortic impulse is present. Growths of the ascending transverse and descending colon, if palpable at all, are usually freely movable and are located below the umbilical line. Owing to the varying amount of intestinal gas from day to day the tumor may be felt at one examination and elude detection in subsequent examinations, hence the necessity of frequent investigations. Percussion is not of much value. Fecal impactions not uncommon, may be so confusing as to make a diagnosis difficult and sometimes impossible.

The peristaltic wave is important; in some of our cases it was so distinct that the distended intestinal coils could be plainly seen and in two instances we obtained most excellent photographs. So frequently was this condition observed, that when present, it was regarded an important sign of probable bowel obstruction and taken together with several of the aforesaid symptoms was regarded as a reliable diagnostic factor.

CASE 1.—*Primary. Endocarcinoma. Located in Sigmond. Removed. Ends closed-lateral anastomosis. Needle and Thread. Recurrence in five months.*

History.—Mrs. S. P., aged 42, had four children. Menses were always regular until last six months when they became more profuse but not excessive. No leucorrhea. She always enjoyed good health, bowels always regular until six months ago, when an occasional cathartic became necessary. Constipation increased so that repeated daily efforts with cathartics and enemata would after three to four days produce an evacuation and finally all efforts were unavailing.

Examination.—On admission uterus was only moderately movable, very tender and to it seemed to adhere a soft doughy mass whose outlines were difficult to fix in an upward direction. Its lower border seemed fairly well circumscribed. It seemed to fill the iliac fossa. There was much very severe abdominal pain. No discernible peristaltic wave but much gurgling of gas.

Operation.—The upper end of the sigmoid was found adherent to the uterus and that portion of the gut above the point of adhesion filled with a large mass of feces and gas. This proved to be the tumor that was palpable before the operation. The gut was separated but the adhesion surface was suspicious of malignancy. The gut above and below the point of constriction was clamped and the mass removed. The distal and proximal gut ends differed so greatly in diameter, owing to the distended central end, that an end-to-end anastomosis was deemed inadvisable, consequently both ends were closed by purse string suture, and a lateral approximation done with needle and thread. The growth proved to be an adenocarcinoma.

CASE 2.—*Secondary. Papillomatous ovarian. Descending colon. Removed end-to-end. Czerny-Halstead Suture. Double suspension suture from recurrence. Free after one year. Lost from sight.*

History.—Mrs. M. M. A., age 44, has always been constipated since girlhood. Has taken all forms of cathartic and in large doses. Has had three children, menstruates regularly with little pain. Since four months she has had severe griping pains of more or less intensity sometimes requiring anodynes. She complained of frequent and annoying rumbling in her bowels, especially during attacks of pain. She has lost no flesh, appetite and digestion normal. It became more difficult to procure bowel evacuation until finally all efforts failed.

Examination.—On admission I find her in good condition. Abdomen moderately tympanitic, slightly tender over every portion except in left iliac fossa where pain is severe on pressure. Bimannal examination discloses an enlarged slightly tender uterus, in left parametrium a movable, tender, orange-sized mass. It is believed that there may be a bowel adhesion to this mass. Operation advised and accepted.

Operation.—Median incision. Mass in left side proved to be an ovarian papilloma to which is adherent the lower end of the descending colon, in fact, the colon seemed to be incorporated into the papillomatous mass. The growth is ligated at its base and separated from its uterine attachment. The gut is doubly clamped above and below the neoplasm and removed. The bowel is joined by an end-to-end anastomosis by a continuous Czerny suture and two rows of Halstead sutures. Nature of growth, secondary papilloma.

CASE 3.—*Primary. Adenocarcinoma. Located in upper end descending colon. 1. Short circuit, Murphy button. 2. Growth removed, ileo-colostomy. End to side. Recurrence in twelve months. Death in eighteen months.*

History.—Mr. L. S., age 60, mechanic, American, complains of much abdominal pain of a cramp-like character often vomits and has obstinate constipation. He states that his illness began four weeks ago with severe griping pain and more or less constant desire to move the bowels but he was usually unsuccessful. Purgatives sometimes produced evacuations but always associated with severe pain. These symptoms have become progressively worse until the date of our first examination.

Examination.—Temperature normal. Pulse, 120. Respiration, 40. General abdominal tenderness most severe near the left costal margin, but no tumor could be made out, chiefly on account of the tenderness. An operation was advised chiefly on account of the apparent bowel obstruction.

Operation.—Through a median incision extending above the navel a mass could be felt in the upper portion of the descending colon. It was hard and firm, moderately movable. The condition of the patient was so unfavorable that an immediate removal of the growth was deemed advisable; consequently a lateral anastomosis was established between the transverse and the descending colon with a large Murphy button. The button holding perfectly, the abdominal wound was closed. The patient recovered quickly from the anesthesia and in an hour passed a large amount of flatus, and on the second day with the aid of a small enema a large bowel movement occurred. The button passed on the twelfth day. The general strength returned rapidly so that on the twentieth day after the first operation a second one was done for the purpose of removing the neoplasm. Through a high incision in the left semilunar line the growth was exposed. It was first detached from its mesenterial attachments. Two long hemostatic clamps above and below the tumor were applied and the gut between the two clamps resected. The intestinal ends were inverted and closed. The anastomosis opening from the first operation seemed perfect. The abdomen was closed without drainage. Nature of growth adenocarcinoma.

CASE 4.—*Primary. Adenocarcinoma (ileocolostomy). Located in ileocecum. 1. Artificial anus from ileum. 2. Lateral approx. Needle and thread. Well six months later, not heard from since.*

History.—Mrs. T. R., aged 50, had good health until 18 months ago, when she experienced colicky abdominal pains, particularly in the right hypochondrium, sometimes associated with vomiting. Bowels fairly regular. No blood in the stools. Her weight gradually diminished. The abdominal pains became more frequent and more severe.

Examination.—Present state. Abdomen moderately distended. Manipulation caused visible peristaltic waves, especially in the right iliac fossa. In this region could be felt a fist-sized elastic tumor. Gas could be heard to pass through it, probably through the ileocecal valve. Bowel passages were obtained only by artificial aid.

The diagnosis was bowel obstruction in all probability due to a malignant neoplasm. The loss of flesh and cachexia associated with a palpable neoplasm seemed to warrant this conclusion. The pain and vomiting increased, the obstructive symptoms and the great prostration seemed to indicate an immediate interference. An operation was accordingly advised and promptly accepted.

Operation.—Chloroform. A section in the median line revealed a mass of distended intestines. Exploration was unsatisfactory. The neoplasm in the right iliac fossa could be felt but not accurately outlined. The patient appeared extremely exhausted, haste seemed imperative, consequently a loop of ileum was drawn out of the wound and carefully surrounded by gauze swabs, an incision into the ileum was made, permitting the escape of a large amount of flatus and fecal matter. The intestinal opening was closed and the loop of ileum was fastened to the abdominal wall for the purpose of making an artificial anus according to Maydl. The loop of ileum opened 36 hours later and a large amount of flatus and fecal matter was evacuated. The abdomen became flat in twenty-four hours. The general condition of the patient improved very rapidly and she gained in weight and strength rapidly. In two weeks the patient was up and about her home. Three weeks from the date of her operation a second operation was made to restore the continuity of the intestinal canal.

Second Operation.—Incision through the linea semilunaris revealed an orange-sized growth involving the ileocecal junction almost closing the ileocecal valve. The loop of ileum, which was attached to the abdominal wall, proved to be afferent iliac limb of the loop making the artificial anus. This loop together with the cecal tumor was removed, and the afferent limb of the artificial anus was closed. The closed end of the ileum was placed against the closed colon and a lateral anastomosis made with needle and thread. Further exploration of the abdominal cavity revealed no other pathology, consequently the abdomen was sutured. The opening that had been occupied by the artificial anus was then closed. Recovery was uneventful. Nature of growth of adenocarcinoma.

CASE 5.—*Primary. Adenocarcinoma. Located in ascending colon. Hepatic flexure. Excision, ends closed, lateral approx. Murphy button. Well two years later.*

History.—Mr. H. A., laborer, aged 38. There was vomiting of especial moment in the early history. The present illness began nearly two years ago with occasional griping pains in the abdomen. These were believed to be due to gastric disturbances. After an unusual exertion some six months ago, followed by an unusual amount of pain in the abdomen, he observed for the first time a lump in the right side. He had for a considerable period been very much constipated. There had been a gradual loss in weight and he became gradually pale and weak.

Examination.—Status Præsens. Patient of medium height, well built, very pale. The abdomen symmetrical, shows a distinct fullness in the right flank. A distinct irregularly rounded mass can be palpated in the right hypochondriac and right lumbar regions, which can be moved upward and downward and laterally almost to the median line. The lower border is three fingers breadth below the transverse navel line. It appears to have no connections with the liver. The mass can be pushed almost into the renal fossa. It is only slightly tender. No tender points in any other part of the abdomen. Leucocyte count, 20,000, Hemoglobin, 45 per cent., red corpuscles, 4,000,000, urine clear, sp. gr. 1,020, alb., 0, sugar, 0. No renal elements microscopically. Temperature and pulse normal. The mobility, size and location of the tumor suggested a renal origin. The absence of all microscopic elements in the urine indicated an extra renal origin. A constantly increasing and stubborn constipation seemed to indicate an intestinal origin. The opinion is strengthened by the statement of the patient that he can feel a bubbling of gas toward and away from the tumor. He states that he can distinctly feel gas moving toward the mass where it seems to be arrested for a few seconds and then it passes beyond and away from it. The passage of gas can sometimes be felt with the palpating hand. The stenoscopic examination plainly indicated the passing of gas through the growth. Percussion gave a flat tympany.

Examination of stomach contents one hour after an Ewald's test breakfast, gave the following. Acid reaction, odor sour, distinct red color with phloro-glucin-ranillin solution. Inflation indicated normal position and size of the stomach; the growth was in no way affected. Tapping the abdominal walls with the finger tips started peristaltic waves which could be plainly seen passing across the upper part of the abdomen from left to right, at the same time bubbles of gas could be felt with the hand and heard through the stethoscope, passing through the tumor.

From the above findings it was believed that tumor of renal origin could be excluded. The test-meal investigation was negative as to stomach or pyloric involvement. There appeared to be no origin in the liver on account of tumor movements independent of the liver. Clearly we had to do with an intestinal neoplasm; its mobility, the passage of gas through it, the arrest of the peristaltic wave by it, together with the obstinate and increasing constipation indicated its presence. Its location suggested the hepatic flexure and transverse colon as its seat. An operation was advised and eagerly agreed to by the patient.

Operation.—Incision through right linea semilunaris reveals a mass involving one-half of the ascending and hepatic colonic flexure, which can be lifted into the wound. Mass is excised between clamps, two above and two below the growth. The ends of the colon are closed and a lateral approximation with a Murphy button is made. The abdomen is closed without drainage. Recovery uneventful. Nature of growth adenocarcinoma.

CASE 6.—*Secondary. Cicatricial mass. Located in descending colon from uterus and tube. Removed end-to-end suture. Double supporting loop. Lost sight of after two months.*

History.—Mrs. J. A. S., aged 42, American, has had three children, last one five years old. One year ago began having colicky pains at intervals. Bowels had always been regular, began to be irregular requiring an occasional cathartic until three months ago, constipation began to get progressively worse, requiring cathartics in increasing doses and frequency until within the week preceding admission large doses of cathartics and enemata were only slightly successful. She had observed a profuse menstrual flow and occasional uterine hemorrhage in excretion.

Present State.—Apparently in good health, quite fleshy. Has lost no noticeable weight. Examination discloses an enlarged and tender uterus in normal position. Palpation produces slight uterine hemorrhage. In the left parametrium can be felt a moderately movable hen's-egg-sized swelling which was believed to originate in the left ovary or tube and probably had become adherent to the rectum causing the constipation.

Operation.—Abdominal section disclosed an enlarged uterus irregular, slightly nodular fundus. The descending colon was prolapsed and its lower end firmly adherent to the posterior and left side of the uterus, together with an old pyosalpinx. The sigmoid was crowded down into the cul-de-sac forming several reverse coils. The adherent coil was separated with the scissors and packed with gauze swabs and pushed aside. The uterus and adnexa were removed in toto. Then the adherent portion of the bowel, which was a cicatricial mass was excised and an end-to-end enterostomy was done using the double loop supporting ligature. Nature of constriction cicatricial.

CASE 7.—*Primary. Adenocarcinoma. Located in ileocecal region. Ileum planted into the side of colon. Murphy button. Lost sight of four months later.*

History.—Mrs. H. S., age 51, housewife. Her present illness began six months ago with constipation, which had increased so that her bowels moved only every three to five days and then only after repeated artificial aid, usually evacuating hard and lumpy feces. These periods of obstinate constipation have several times yielded to looseness, the stools being yellow and slimy, but containing no blood, nor did she complain of tenseness. Several weeks ago, she vomited a sour material, but no blood. She has lost much in weight. Exertion causes shortness of breath; recently her feet became swollen. Constipation was present but could be relieved.

Examination.—Although the patient appears somewhat pale, she is well nourished; normal temperature, slightly coated tongue. Abdomen somewhat distended. In the ileocecal region is a distinct elevation that is not affected by the respiratory movements nor by position. On palpation can be felt a goose-egg sized rounded nodular mass about midway between the anterior superior spinous process and the umbilicus. It can be felt immediately beneath the abdominal wall, not tender, very hard. It is freely movable and can easily be crowded under the navel. With a stethoscope occasional bubbles of gas can be heard to pass toward it, which are arrested for an instant and then pass on. A flat tympany can be elicited on light percussion. No peristaltic waves. The tumor could be pushed upward almost to the liver but not to it nor into the renal fossa, neither could it be made to descend into the pelvis. Test meal was negative as to stomach disease. Urinary analysis revealed no pathologic conditions.

The clinical evidence indicated an intestinal growth, probably ileocecal, but that was not certain.

Operation.—An incision through the linea semilunaris revealed a tumor involving the entire head and circumference of the cecum and the lower wall of the ileum. The mass was easily removed together with about three inches of the ascending colon and about two inches of the ileum. The open end of the colon was closed with a Czerny-Lembert suture. The end of the ileum was implanted into the inner side of and about one and one-half inches above the closed end of the ascending colon, by means of a Murphy button. Patient died on fourth day from perforation at site of anastomosis. The growth proved to be an adenocarcinoma.

CASE 8.—*Primary. Neoplasm located in lower end of descending colon. Relieved by short circuit with Murphy button. Died in three months.*

History.—Mr. W., age 58, about six months before admission, was struck on the left lower quadrant of the abdomen. He continued his work during the day but after retiring he had nausea and vomiting, and abdominal pain. The left iliac pain has continued since the accident, often worse at night

and sometimes aggravated by eating. He gradually lost in weight. Has had very frequent desire to evacuate the bowels, but is always unsuccessful without artificial aid.

Examination.—Abdomen distended and tender. Pain in left iliac region, where a firm mass can be palpated. Bowels can be moved only with enemata, bringing away flatus and considerable quantity of liquid feces but no blood or pus. Some free abdominal fluid can be made out. A peristaltic wave is visible. It is believed that we have to deal with a growth of the sigmoid.

Operation.—Through a median incision a large mass involving the sigmoid could be made out. The mass was firmly adhered to the posterior and lateral pelvic walls. A removal seemed out of the question. Consequently, the portion of the descending colon was brought down and fixed to the intestine at the recto-sigmoidal junction with a large Murphy button. The button seemingly did not hold the intestinal walls satisfactorily, probably on account of their thickness, therefore reinforcing sutures were employed. The abdominal cavity was closed without drainage. Recovery uneventful.

CASE 9.—*Primary. Adenocarcinoma. Located in lower end of descending colon. Removed end-to-end. Murphy button. Halstead suture, double row for support. Well after one year.*

History.—Mrs. B., age 35, small woman, 5 feet, 2 inches in height, weight 92 pounds. Abdomen moderately distended, somewhat tender. Peristaltic wave can be started by tapping the abdomen lightly with the finger's end. A tender and movable mass can be made out in the left side of abdomen near the left iliac crest. She complained of more or less colicky pains. Bowels greatly constipated, enemata appear to relieve the large bowel below the mass but not above it. An occasional gurgle of gas through the tumor can be felt, especially when the lower bowel has been emptied. No blood or pus in stools. Diagnosis, neoplasm of descending colon.

Operation.—Through median incision a goose-egg-sized mass was discovered at the ileosigmoidal junction. The mass could be lifted into the abdominal wound. The intestine was clamped with Murphy clamps above and below the growth and then removed, the open ends of the colon were joined by a large Murphy button. The gut walls were somewhat thick, so that the button held them imperfectly, consequently a row of double Halstead sutures were placed over the button making the union perfect. Recovery uneventful. Nature of growth adenocarcinoma.

CASE 10.—*Secondary. Carcinoma. Located in appendix, head of colon, and ileocecal valve. Removed. Lateral approximation by suture. Moynihan clamps. Well six months later, then lost sight of.*

History.—Mr. D. S. J., age 44, laborer, since seven months has had abdominal discomfort and occasional griping. Constipation at intervals, occasionally some diarrhea. Appetite variable. Five months ago he developed a tenderness in right iliac fossa and was thought to have appendicitis. Two months previous to admission a small mass could be palpated.

Examination.—On admission he appeared anemic, stated he had lost 30 pounds in weight. Abdomen moderately distended. A tumor, moderately movable, goose-egg-sized, slightly tender, could be felt in right iliac fossa. Gas could be heard and felt to pass through the mass. Peristaltic wave very distinct. No bowel movement for three days. Pulse and temperature normal. Diagnosis, cecal tumor.

Operation.—Incision right semilunar line. Tumor involves the appendix and had extended upward to head of colon and to ileocecal valve. The ileocecum, including the tumor, was removed. The end of the descending colon was closed by double-row continuous Lembert sutures. The ileum was treated in the same way. The two bowel ends were placed side by side and the bowel continuity was restored by a lateral entero-enterostomy with sutures and with the aid of the Moynihan clamps. The closed bowel ends pointing in the same direction. The nature of the growth proved to be carcinoma.

CASE 11.—*Primary. Carcinoma. Located in ileocecum. Removed end of ileum implanted to side of colon. Murphy button. Died.*

History.—Mrs. A. L. D., age 49, was always in good health until she began to complain of pain in the right iliac fossa, which persisted three or four months when she developed a swelling in the ileocecal region which was regarded to be an appendiceal abscess. Under an anesthetic an incision was made, a rather firm mass was encountered but no pus. A drainage tube was inserted and further operative efforts were abandoned. A month later she came under our observation and the following condition was noted:

Examination.—She was quite fleshy, although she stated that she had lost greatly in flesh. Temperature and pulse were normal. In the right iliac fossa was encountered a fist-sized mass firmly adherent to the abdominal wall and into this mass extended a wound about two inches long discharging a small amount of pus. There was much local tenderness and more or less abdominal, colicky pains, bloating and almost complete bowel obstruction. Immediate operation was urged and consented to.

Operation.—After the usual skin preparation, the wound itself was cauterized with carbolic acid and the cavity filled with iodoform gauze. An incision was made, encircling the wound in such a manner as to remove the walls forming the tract into the mass and finally entering the abdominal cavity. It now became clear that we had to deal with a growth of the cecum. The neoplasm was detached from its posterior attachments. The colon was severed well into healthy tissues and the ileum as well. The end of the colon was closed by Czerny-Lembert sutures and the ileum was implanted by means of a Murphy button into the side of the colon. The abdominal wound was closed without suture. The patient did well for a week when she developed a peritonitis ending in death. A post-mortem examination revealed a perforation at the ileocolonic juncture. Nature of the growth proved to be adenocarcinoma.

CASE 12.—*Primary. Adenocarcinoma. Located in splenic flexure. Removed end-to-end. Murphy button. Lembert reenforcing. Died.*

History.—A. D. J., aged 40 years, mechanic, had always enjoyed good health until 1898. While serving with the U. S. troops in Cuba he began to complain of more or less colicky pain, diarrhea and tenesmus. The stools often contained considerable blood. He improved for short periods only to be followed by recurrences. After his return from Cuba he suffered alternately from bloody diarrhea and constipation until the latter condition became constant, amounting to a bowel obstruction when he was admitted.

Examination.—Appears emaciated, no bowel movement for five days. States that he has lost 40 pounds in weight. His abdomen is bloated and has a moderate amount of tenderness but no tumor can be felt nor any special point of tenderness. The peristaltic wave can be noted, especially when the abdomen is tapped with the end of the finger. Judging from the history it is believed that he had an ulceration of the bowel which has resulted in cicatricial contraction causing a stenosis, which seems to account for the bowel obstruction.

Operation.—On opening the abdomen the greatly distended bowels crowded into the wound. On prolonged exploration a tumor was found under the left costal arch which existed in the splenic flexure of the colon. It was globular, about the size of a goose-egg and only moderately movable. The incision was prolonged upward and after much difficulty the gut above and below the growth was doubly clamped and it was removed. The colonic ends were joined with a large Murphy button. The gut, however, was too thick for the button so a re-enforcing Lembert suture was made to insure accurate coaptation. Abdomen closed without drainage. Case progressed satisfactorily for four days when a peritonitis developed and death ensued on the sixth day. Autopsy disclosed a perforation in line of suture. The growth proved to be an adenocarcinoma.

CASE 13.—*Primary. Adenocarcinoma. Located in descending colon. Removed end-to-end. Murphy button. Lembert reenforcing suture. Well after one year.*

History.—Mrs. T. B. A., age 48, passed menopause two years previously and always enjoyed good health until one year ago, when she began to have occasional colicky pains, especially in the left side of the abdomen. It became more difficult to obtain bowel evacuations. Two months ago a movable tumor was detected in the left side which was supposed to be a floating kidney. On admission the following was noted:

Examination.—A movable, somewhat tender, fist-sized tumor was noted but could not be pushed into the renal fossa. On auscultation bubbles of air could be heard to pass through it. Air inflation per rectum could be heard at site of tumor but not beyond. No abdominal distension nor peristaltic wave could be noted. Obstruction was not complete. The diagnosis of neoplasm of the colon was made.

Operation.—Incision through left linea semilunaris. A fist-sized mass located in the colonic walls, was easily lifted out. After double clamping above and below the tumor it was excised together with about six inches of descending colon. End-to-end anastomosis with a Murphy button was made, with some difficulty the thick colonic walls were approximated within the grasp of the button. A re-enforcing Lembert suture closed the operation. The wound was closed after a gauze drain had been placed near enterorrhaphy line. Recovery uneventful. Nature of growth proved to be adenocarcinoma.

CASE 14.—*Primary. Adenocarcinoma. Located in splenic flexure. Removed, end-to-end suture. Czerny-Lembert. Double loop supporting ligature.. Well after one year.*

History.—Mrs. W. S. S., aged 38, for many years had suffered from uterine disease. She was always more or less constipated, which increased so that during the last three to four months it has been difficult to obtain bowel evacuations. For one month a sensitive mass has been known to exist to the left of the umbilicus, moderately movable. She has had occasional bloody stools, but these were attributed to hemorrhoids. More or less indefinite abdominal pains.

Examination.—Has lost 20 pounds. Appears anemic. More or less indigestion. Moderate distension. A hen's-egg-sized mass can be felt in the left side, movable so that it can easily be pushed up to left costal arch and almost into the left iliac fossa. No peristaltic wave, no gurgling of gas through the mass, but rectal insufflation of air indicated on auscultation that the air is arrested at the growth. Diagnosis, neoplasm of the descending colon.

Operation.—Incision through left linea semilunaris. Mass easily lifted out of the abdomen and found to involve the splenic flexure of the colon. The mass is excised in the usual way. An end-to-end anastomosis is made by the aid of the double loop suspension ligature, and the intestinal ends are joined by the continuous Czerny-Lembert sutures. The abdomen is closed without drainage. Recovery uneventful. The neoplasm was an adenocarcinoma.

CASE 15.—*Primary. Adenocarcinoma. Located in transverse and hepatic flexure. Closed ends. Lateral Approximation. Murphy button. Died four months later from a fall producing basilar fracture. No return of growth.*

History.—M. McL, aged 65, always enjoyed good health until a year ago when she began to lose flesh, and became somewhat constipated so that she was obliged frequently to resort to cathartics. About three months before her admission she observed a movable lump in the umbilical region. Otherwise she declared herself to be in perfect health.

Examination.—On admission she appeared moderately anemic. She appeared as if she might have lost flesh from the flabby condition of her skin. She enjoyed a fairly good appetite. No digestive disturbances. Her bowels moved only by artificial aid and then with difficulty. Occasionally she had had blood in her stools. A fist sized, very movable and painless mass existed beneath the umbilicus. It was believed to be intestinal, but whether large or small intestine, could not be made out. There was no peristaltic wave. Auscultation disclosed nothing, rectal air inflation negative. Never had had colicky pains.

Operation.—Median incision above the umbilicus disclosed a mass involving the entire transverse and hepatic flexure of the colon. The mesenterium appeared free, consequently after a ligation, with catgut, of all attachments, the colon was divided well into healthy structures to either side of the neoplasm. The ends of the colon were closed by a purse string and continuous Lembert sutures. The closed ends were then placed side by side and a lateral anastomosis made by a large Murphy button. Abdomen closed without drainage. Recovery was uneventful. The neoplasm proved to be an adenocarcinoma.

CASE 16.—*Primary. Myo-fibrous polypus. Located in hepatic flexure. End-to-end.. Connell-Cushing suture. Double loop suspension. Well after three years.*

History.—Miss A. V., aged 25 years, since one year had had very many bloody stools, associated with much abdominal colic-like pains. At times she was greatly constipated, at other times there were frequent bowel evacuations of muco-hemorrhagic character. She lost no flesh, her appetite and digestive functions seemed normal.

Examination.—No evidences of the source of the hemorrhage could be found in either the rectum or sigmoid. An indistinct and tender mass was found beneath the umbilicus. No peristaltic wave was discernible, probably on account of the firm and well developed abdominal muscles. Auscultation established nothing. The alternating constipation and bloody diarrhea together with tender mass led to a probable diagnosis of intestinal neoplasm, and an exploratory operation was advised.

Operation.—Incision in median line below the umbilicus disclosed a mass attached to the hepatic flexure of the colon and was drawn down nearly to the right iliac fossa. The omentum had become quite extensively adherent to it, and at first it appeared to be inoperable. However, the omental attachments were gradually severed and the mass could be brought into the wound. On close examination it appeared as if the mass was chiefly in the lumen of the colon. It was the size of a hen's egg and appeared to be attached only to the mesenteric border. The growth together with about five inches of colon was removed. The ends of the colon were united by a Connell-Cushing suture aided by the double suspension loop. Recovery was uneventful. Well after two years. The neoplasm proved to be a myofibroma springing from the mesenteric side of the colon.

In reviewing the foregoing cases, sixteen in number, we find that the majority, in fact, all but one case must be classed as malignant. Eleven were adenocarcinoma. One was papilloma, another myofibroma. One appeared to be cicatricial, secondary to a neoplasm of the uterus. In one the exact diagnosis could not be made with certainty on account of its inoperable character, but in all probability it was carcinoma. The greater number of these cases were well advanced, in fact several of them were advanced to a point where the wisdom of an extirpation might be questioned. When we consider the early dissemination of all growths of the epithelial type into neighboring glands and sometimes to more distant regions, the operator, who has dealt with numerous growths involving other parts of the body, pauses and weighs the chances for and against the possibility of prolonged relief and possible cure. Up to the present time the permanent cures have been few. The operative mortality, while not as good as from other neoplasms of the abdominal cavity, has, with a gradually improving technic improved, and I am convinced that with an accumulation of diagnostic aids that will enable us to recognize intestinal neoplasms in their incipiency, the fatalities eventually will be no greater than for other abdominal operations. Of the series here reported, we have a mortality of three cases, but the recurrences have been numerous, in fact, we are at this writing unable to state if any of them will remain free from recurrence. It is impossible to follow the history for more than a short time. Many of our cases who may have suffered from recurrence undoubtedly have fallen into the hands of other surgeons, consequently it is impossible to draw any conclusions as to permanency of cure from the few cases here recorded and for that matter, from any number.

The surgery of neoplasms of the large intestines is very much in the same state as the surgery of malignant new growths of the stomach. If operative inter-

ference is deferred until the clinical signs are positive, i. e., when bowel obstruction is complete and a tumor can be felt, then metastatic deposits have become so extensive that we can scarcely hope to eradicate all the pathologic structures. It is true we still can very often remove the principal growth, restore the continuity of the bowel lumen and achieve an operative recovery, but in the light of the present status of bowel surgery, we must expect an all too great recurrence percentage. Surgeons have dreaded to enter the abdomen when the clinical signs were doubtful. So did they, not so very long age, where the bile tracts of the appendix were involved, chiefly because they had not become familiar with definite and well defined diagnostic signs and on the other hand on account of the uncertain technic in dealing with these organs. The same holds true of neoplastic intestinal obstruction. Sometimes the signs are absolute and yet it is with dread that most surgeons attack these cases. An intestinal neoplasm usually involves a resection.

The principles involved in such a procedure are well defined, but the details of such an operation are countless. No two operators accomplishing the same result employ the same methods. I am sure that this unsettled operative condition is responsible for much procrastination. It will be seen from the cases here detailed that a variety of methods of bowel union were used. Without going into a discussion of the respective merits of the various methods, it may be briefly stated that from the experience gained from our cases of neoplasms of the large intestine as well as bowel obstruction due to inflammatory and mechanical causes, two principal procedures for the restoration to the continuity of the bowel have commended themselves as easy and rapid of accomplishment, viz.: First, in cases where the resected ends were not entirely free from inflammatory conditions, a closure of both ends of the bowel with purse string and Lembert sutures, after the removal of the neoplasm, and a lateral approximation near the ends and the establishment of an anastomosis with suture aided by the Moynihan clamps; and, second, after the removal of the neoplasm and the bowel was otherwise sound, an end-to-end union with a Connell and Cushing suture aided by the double loop suspension ligature were found most practical and easy of application. The merits of these methods will be the subject of another communication at another time and place.

THE SURGICAL CONCEPTION OF SIGMOID PATHOLOGY.*

H. D. NILES, M.D.
SALT LAKE CITY, UTAH.

In the evolution of intraperitoneal surgery, our progress has invariably been from a resultant or terminal pathology to the antecedent or original pathology; from the well-advanced and easily discovered lesions to the earlier and more obscure departures from normal. Gradually, step by step, as our knowledge has widened by experience and study, we have learned that large pelvic abscesses have small beginnings in an infected tube or endometrium; that cancer of the gall bladder or stone in the ducts means a previous infection of the parts; that malignant disease of the rectum, stomach or uterus is usually preceded by benign localized inflammatory or necrotic lesions, and we have learned to take into thoughtful account the physiologic and anatomic peculiarities of these different regions in connection with their etiologic bearing on pathologic conditions, and, lastly, as better results followed timely surgery, we have won the confidence and co-operation of our colleagues, the internists, without which many victims of intraperitoneal pathology must still have suffered or died, with their malady unrecognized, untreated or mistreated. So it has been in other parts of the abdomen, and so we have reason to hope it will be in sigmoid disease.

MORTALITY.

So long as our surgical endeavors are limited to advanced malignant disease and acute obstruction from volvulus, we can not reasonably hope to reduce the present high mortality that attends sigmoid operations. So soon as we learn to recognize, trace and interpret the successive morbid processes, that unchecked lead up to dangerous terminal pathology, we may confidently expect to realize the full benefits of timely and preventive surgery here as in other parts of the body.

In spite of the absence or scarcity of statistical operating-room and postmortem evidence, there are good reasons for believing that the sigmoid must often be the site of important pathologic processes deserving surgical consideration, of which only the small proportion that terminate in cancer or complete obstruction of the bowels are usually recognized.

ANATOMIC CONDITIONS.

No one familiar with the surgical anatomy of the sigmoid can fail to be impressed with the existence of conditions that must render this part of the alimentary canal especially susceptible to disease and accident. It is a constricted irregularly tortuous portion of the large intestine, firmly attached at either extremity by a comparatively short mesentery, the middle portion freely movable, being connected by a long mesosigmoid, and would seem to present every opportunity for the occurrence of twists and angulations (Fig. 3).

A sagging descending colon, with its loose attachment, favors angulation at the upper extremity of the sigmoid, while angulation of the lower extremity can easily occur when the middle portion falls over the more closely attached distal end of the sigmoid. Under the head of volvulus, only those distortions are described as are seen more or less imperfectly in operations, but experimentally various other twists and angulations may be produced in a way to obstruct the bowels partially or completely.[1]

It is highly probable that partial obstructions of the large intestine, malignant and benign, occur at this point much oftener than is generally believed; for unless the obstructive symptoms are urgent these cases rarely come under the observation of the surgeon and in most instances escape recognition. In the light furnished by experiments on the cadaver and recent clinical observations, I feel sure that I have in the past treated the vast majority of these cases symptomatically with no conception of the real causes of the symptoms, and doubtless others have often made the same error.

In no part of the gastrointestinal canal are the anatomic conditions so favorable for the development of

* Read in the Section on Surgery and Anatomy of the American Medical Association, at the Fifty-seventh Annual Session, June, 1906.

1. Volvulus is permitted by a long mesocolon, but the direct cause must be either trauma, or more frequently mechanical obstruction at the distal end, sufficient to distend and displace the middle portion of the sigmoid.

ulcer. Hardened fecal matter passing from a large straight canal through a smaller tortuous one, frequent temporary angulations, with the occasional sagging of one part over another, are markedly irritating factors, all favoring localized inflammatory and necrotic lesions. Long-continued pressure of fecal accumulations on the intestinal wall, by interference with the circulation, may induce local necrosis; any twists or compression of the mesosigmoid may produce the same result by interrupting the blood supply, and these last-mentioned causative factors of ulcer must often be operative in this region.

PATHOLOGY AND LOCATION OF LESIONS

Ulcer and angulation are doubtless often associated, with the former as the usual primary causative factor. In two of my operations I found the bowel angulated at the juncture of the descending colon with the proximal extremity of the sigmoid, and an ulcer at the angle, which gave way when I attempted to restore the parts to their normal position (Fig. 1). It is easy to understand how most permanent angulations or twists of the sigmoid are preceded or followed by an open or cicatrized ulcer and how recurring angulations or twists might be more likely to occur about the contracting scar of an old ulcer.

On the other hand, it is true that pus collections can not often occur in sigmoid pathology, for, unlike the infected Fallopian tube, appendix and bile ducts, where drainage is imperfect or impossible, the anatomy of the sigmoid permits good drainage from the mucosa, which is the usual site of infection. A perforating ulcer, however, might result in abscess here, as it often does in the stomach ulcer.

It is a remarkable fact that not less than 87 per cent. of all cancers of the gastrointestinal tract are situated in the narrow strictured parts of the canal, the sigmoid standing third in point of frequency. It surely can not be chance or the operation of any general cause that so distinctly marks these parts as the favored sites of malignant disease. This overwhelming predominance of cancer in certain regions can only be due to a local cause; and, so far as can be determined, that local cause is chronic ulcer, or its cicatrix. It can not matter whether that ulcer is produced by hyperacidity of the gastric juice, stagnation of the bowel contents, abnormalities of the sphincters, or the irritation or pressure of hardened feces on the intestinal wall, so long as we know that ulcer is essential to the development of cancer and the prevalence of cancer indicates the relative frequency of ulcer.

But since recent studies in stomach pathology go to show that only a small proportion of gastric ulcers terminate in cancer, and that a large majority of these ulcers either cicatrize spontaneously or remain open indefinitely, it is apparent that ulcer is far more frequent than cancer, and, as this doubtless holds as true of the sigmoid as of the pylorus, we may assume that ulcer of the sigmoid is of very common occurrence.[2]

2. A good proportion of our office patients complaining of chronic obscure abdominal symptoms should be examined for sigmoid ulcer.

Incomplete, non-malignant stricture, with or without a twist or angulation of the bowel, probably ranks next to ulcer in point of frequency and in time of occurrence. This belief is based on: First, the known tendency of intestinal ulcer to produce cicatricial stricture; second, the ease with which stenosis can be produced by twisting or angulating the sigmoid in the cadaver; third, the history of gradual occlusion elicited from a good proportion of the patients operated on for complete obstruction; fourth, the marked symptoms of stenosis of the sigmoid observed in a number of patients not operated on; fifth, the assumption that any contracting ulcer, perhaps insufficient to produce occlusion itself, might favor angulation with resulting obstructive symptoms. I have several patients under observation who present to my mind convincing evidence of chronic incomplete stricture or stenosis of the sigmoid, and at least three of my non-malignant cases, in which the patients were operated on for complete obstruction, gave a distinct history of gradual occlusion extending over a period of several months. The apparent slow development of sigmoid cancer noted by most careful observers should, I am sure, be interpreted as an evidence of a precancerous pathology rather than a deviation from the general law that the progress of malignant disease is essentially rapid.

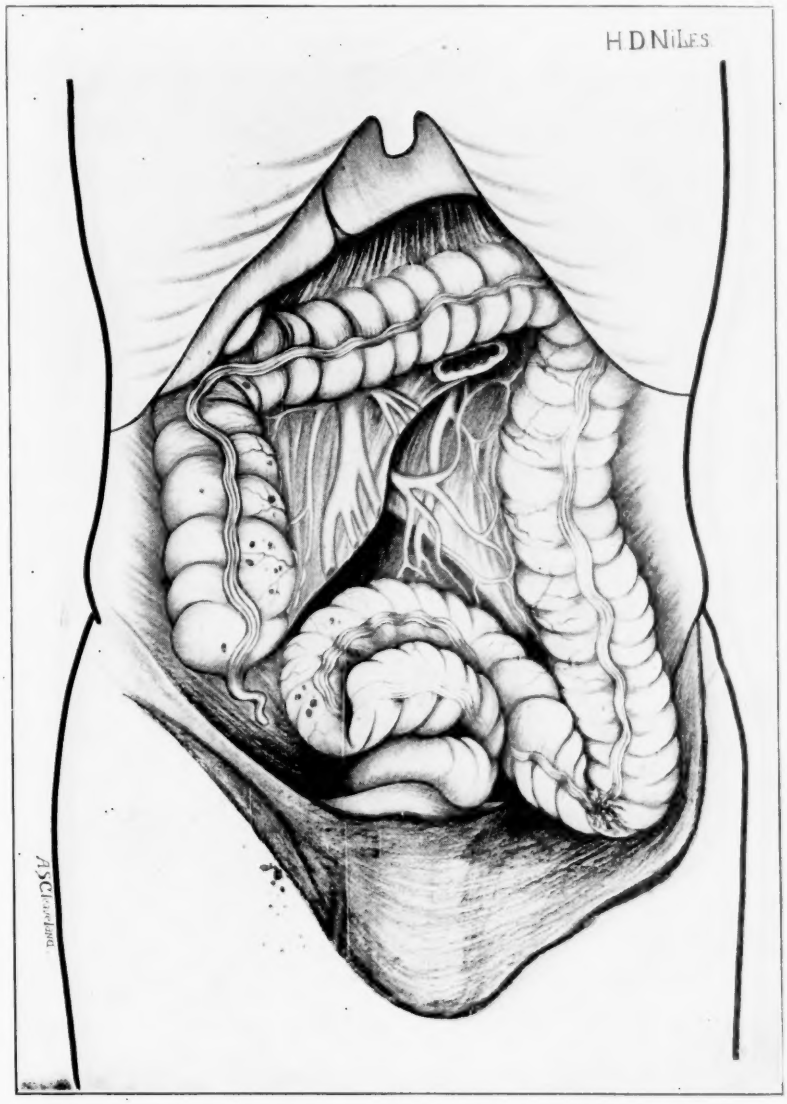

Fig. 1.—Showing commencing ulcer and angulation at proximal and distal ends of sigmoid.

In the fewest possible words I have attempted to show, first, how ulcer must of necessity be the usual primary lesion resulting from the anatomic and physiologic peculiarities of the sigmoid; second, that cancer here, as in the stomach, is preceded by ulcer; third, that ulcer is always the causative factor in annular stricture; fourth, that it is the most influential factor in sigmoid angulation and one of the predisposing causes of accidental volvulus; fifth, that, as a consequence, it is the important antecedent pathology of all malignant and most non-malignant, complete and incomplete occlusions of the sigmoid.

It must be admitted that the present available statistical, operating-room and postmortem evidence is not alone sufficient to prove these statements, but in a careful study of my own cases and those of thirty well-known American surgeons with whom I have been in correspondence I had hoped to include an analysis of these clinical statistics, but space will not permit.

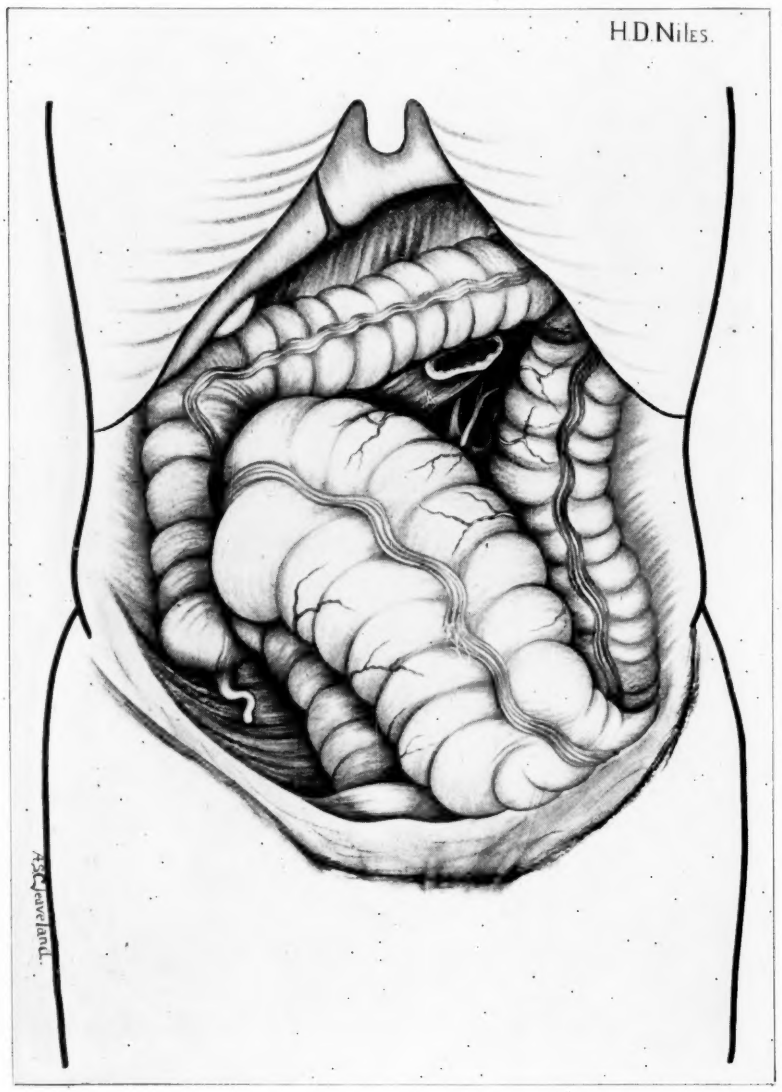

Fig. 2.—Stricture of proximal extremity of sigmoid, showing enormously distended sigmoid after inflation.

The chief (and I think sufficient) support of these conclusions comes from the following facts: First, our knowledge of the surgical anatomy of the sigmoid, gleaned from studies and experiments on the cadaver; second, the relations between ulcer and cancer and ulcer and pyloric stenosis as taught by recent observations made during operations on the stomach; third, the known relative frequency of sigmoid cancer and the occasional occurrence of acute obstruction of non-malignant origin; fourth, the fact that every variety of ulcer, even typhoid, has frequently been found in this region; fifth, the fact that ulcer is the only lesion that could be the common result of the anatomic peculiarities and at the same time the common cause of the terminal pathology of the sigmoid.

If my reasoning is sound and my conclusions are true, or even approximately true, the early recognition and rational treatment of sigmoid ulcer and its complications are worthy of the most careful consideration of both internists and surgeons. The limits of this paper will not permit me to dwell on the symptomatology of sigmoid ulcer, but those who realize the frequency of ulcer in this region and the distress and danger that may ultimately result from ulcer will not measure the gravity of the lesion by the mild symptoms that characterize its early stages. A suggestive history, the exclusion of other diseases, the absence of acute inflammatory symptoms, the left-sided tenderness, either with or without inflation of the bowel, the distension of the colon, the colicky pains, the presence of pus or blood in the stools, obstinate constipation or obstructive symptoms, are all indicative of sigmoid pathology.

METHOD OF EXAMINING THE SIGMOID.

There is one method of examining the sigmoid that I think deserves special mention. Inspection, palpation and percussion before, during and after inflation of the bowel with air or distension with water may be of the greatest value in determining whether or not the lumen is narrowed by stricture, angulation or distortion, and in this way we may even determine the degree and location of any stenosis. Pressure on the distended bowel will often enable us to locate the point of tenderness that otherwise might not be discovered. A fixed point of tenderness without stenosis would point to the probability of an ulcer which might cicatrize spontaneously. Narrowing of the lumen of the bowel with or without tenderness would indicate a permanent lesion or a progressive pathologic process that might in time become a menace to life or health (Figs. 2, 4 and 5).

BASIS FOR RATIONAL TREATMENT.

Any rational treatment of sigmoid disease must be based on our conception of the successive pathologic links that connect the anatomic and physiologic peculiarities of the sigmoid with the dangerous inflammatory and obstructive lesions which we find in late operations. To recognize and to interrupt this process at the earliest possible moment, and before irreparable damage has been done, becomes the aim of those who appreciate the relative frequency and importance of sigmoid pathology in each stage of its progress.

Pathology here passes from the medical to the surgical field: First, when any ulceration or necrotic process starting in the mucosa extends to or includes the peri-

toneum; second, whenever there is any evidence of mechanical obstruction, partial or complete, regardless of the cause; third, when a localized peritonitis exists that does not readily yield to simple measures directed to the suspected cause. This does not mean that every such case should be subjected to immediate operation, but that the decision as to when, when not and how to operate can best be made by those who view these conditions from a surgical standpoint. Medicines, especially cathartics, are always useless and frequently harmful.

The essential principle of treatment of sigmoid ulcer, like that of gastric ulcer, is rest. How best to secure that rest with the least distress and the greatest assurance of safety to the patient no one may as yet presume to state dogmatically. The starvation plan, irrigations from below, or continuous currents of aqueous solutions from above, through an opening in the colon: or in the presence of chronic stenosis or threatened occlusion, iliosigmoidostomy, excision of the ulcer, or exsection of the diseased portion of the gut, are all procedures that may be considered.

In formulating the treatment of a pathology that has rarely been seen or studied except in the most advanced stages we can not expect at once to be free from doubts and misgivings, but as we gradually learn to outline and to carry to the consulting room and bedside a well-defined mental picture of the successive morbid processes in sigmoid disease, more accurate methods of diagnosis will be suggested and more effective means of treatment will be evolved; and we may be assured that in this region, as in other parts of the body, symptomatic medication and "last resort" surgery will in due time be supplanted by rational measures and timely operative procedures.

DISCUSSION.

ON PAPERS OF DRS. NILES AND JONAS.

DR. WILLIAM H. WATHEN, Louisville, Ky., said that recently, while preparing a paper on gastroenterostomy, he corresponded with five men whom he considered among the most distinguished surgeons in Europe in abdominal work—the late von Mikuliez, Kocher, Czerny, Robson and Moynihan—and five distinguished surgeons of this country. The inquiry was as to the kind of anastomosis they make and what method of suturing they use. From the correspondence, he was fairly convinced of the fact that the tendency was to eliminate, as far as possible, all mechanical means in making any sort of anastomosis of the intestinal tract, from the stomach to the sigmoid flexure. He believes that the Murphy button has done more in the process of evolution to show what can be done in anastomosis of the intestinal tract than anything else, and by its use it has been possible to demonstrate conclusively the promptness of firm union in properly coapted surfaces; and, also, that in the hands of the experienced abdominal surgeon the use of the suture is the safest and best method in nearly all cases. Therefore, he advises the use, with few exceptions, of the continuous suture, and especially where it is possible to use Moynihan's method of bringing the parts of the intestinal tract in apposition by including each side in a forcep covered by gum tissue. The continuous uninterrupted suture should usually be used, because it is easily and quickly applied, insures more perfect apposition, and is followed by fewer immediate or ultimate complications. Simplicity and rapid technic must be emphasized as essential factors in intestinal surgery.

DR. R. H. M. DAWBARN, New York, said that at one time he thought that the plates carved from sweet or white potatoes, and the buttons and bobbins he divised of the same material (raw vegetable tissue) were an improvement on the decalcified bone plates of Senn. Perhaps they were; but he has not used anything of the kind for many years. For over fifteen years he has used the continuous linen suture in gut-work, plus a single temporary stitch, so placed as to make smoothly tense the surface being sewn together. He is convinced that simple suturing is the safest method and the best, and that in place of the Connell method, with interrupted stitches, the continuous suture (running Lembert) is the

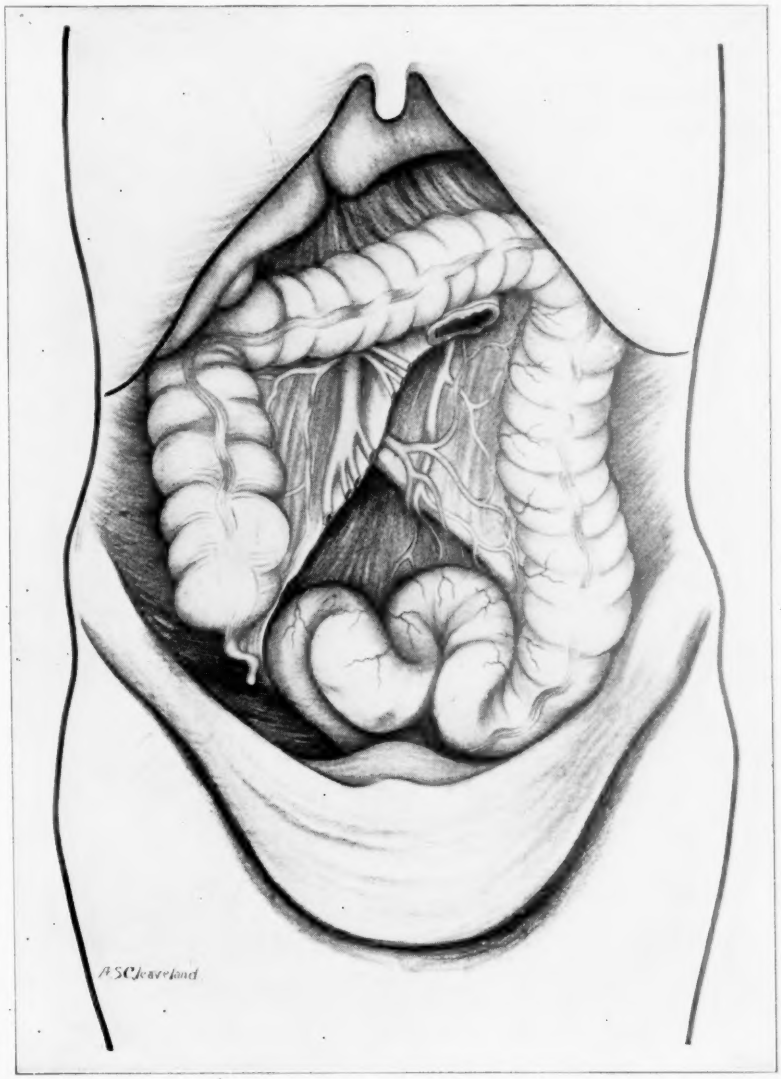

Fig. 3.—The normal sigmoid. From many observations made by the author in the course of his operative work.

safest, using linen thread. But the continuous suture is not a safe one unless one uses with it the morphin splint, administering morphin, so as to put a stop to peristalsis for the time being, until (in a few hours), union is certain to be firm. Otherwise, the continuous suture might cut out at some point, and the wound gape in consequence. Of course, the saving of time in using the continuous suture is the main thing. This point can not be made too strongly.

As regards the Murphy button: If one uses it anywhere in the bowel without the row of sutures about it, then one is depending on Nature to throw out a plastic exudate to surround the region; and experienced surgeons have had the sad

experience of killing one or more patients, before they learned not to trust to Nature in this matter. If one sews all the way round the Murphy button in order to make it safe, then its chief advantage, that of speed, is done away with. One can suture by a running continuous simple Lembert stitch as quickly as one can put in a Murphy button and suture all the way round. Another objection to the Murphy button is that when it cuts loose, one is not sure that it will cut loose on the right side—the proximal—of the anastomosis. He has had the unpleasant experience of having the button go the wrong way, by reverse peristalsis. That is called vomiting when it occurs in the stomach, but when it occurs in the intestine there has no name been given to it. It is a condition that is liable to go on for hours and even for days; and there may be just enough contraction of the anastomotic opening so that the button never passes that point. Dr. Wyeth once reported a case where for more than 120 days the button wandered around between the anastomosis on the one hand and the stomach on the other, until the patient could not stand the colic and misery any longer and a second laparotomy was done for the purpose of removing the button. The patient again got well. But any form of anastomosis that runs even the slightest chance of risk entailing another laparotomy is not to be recommended, in comparison with an anastomosis leaving no foreign body, requiring no especial instrument for its performance, and as quick as the speediest, namely: Continuous suturing of surface, made tense, to aid speed, and safeguarded against leakage, both by rapid, plastic exudate of Nature's glue (because of light scraping of peritoneal surfaces about to be sewn together), and also by the morphin splint, carrying out that cardinal principle of good surgery, to put operated parts absolutely at rest.

DR. F. A. DUNSMOOR, Minneapolis, has been in the habit of using a button when making a gastrointestinal anastomosis, for one particular reason. The button leaves, after its escape, a peculiar circle which does not grow smaller as time goes on. This he has verified in postmortem examinations three years after operations. He has yet to hear anyone say that the opening between the stomach and the intestine did contract after having been made in the circular manner, when a Murphy button was used, no matter what became of the button afterward. He uses the suture in the colon since the button may temporarily obstruct the bowel. The lower in the intestinal tract the greater demand for the suture, but he prefers the button for operation high up in the small intestine.

As to the amount of colon to be resected. He began that work through emergency surgery, and removed the shortest possible damaged portion only. The physiologists say that the colon is not indispensable—that it does not digest food, but does absorb it, and thus helps nutrition. Dr. Dunsmoor resected the ascending colon from the head of the cecum for malignant disease, and the sigmoid and a large part of the descending colon for the same cause; but it remained for Mr. Arbuthnot Lane, of London, to give him courage to remove the colon from the terminal portion of the ileum to the splenic flexure for ulcerative colitis. Mr. Lane goes farther and removes the colon for obstinate chronic constipation.

DR. E. W. ANDREWS, Chicago, called attention to the fact over fifteen years ago Dr. Nicholas Senn, at that time of Milwaukee, was making his classic experiments on the intestine of the dog, which preceded the Murphy button, and practically all intestinal work which is now so much perfected. His colleague in that research was Dr. Connell, of Milwaukee, to whom Dr. Senn gave the credit in his first book, of having devised the first bone plates for intestinal anastomosis. Dr. Connell devised the through and through suture which holds the plates, and also one without plates. Later, Dr. F. Gregory Connell perfected what is now known as the Connell enterorrhaphy, by employing it, ever since the Connells demonstrated their method in their dog experiments. Dr. Andrews has been a firm believer in the Connell suture as being the very strongest known in intestinal anastomosis. He employs it not only for anastomosis of the small and large bowel, but also for pylorectomy and gastroenterostomy. The suture has certain merits over all known stitches, the bone plates and buttons. It has at the same time the action of a clamp and of a suture line, going from the lumen of one hollow viscus to that of the next, including every layer, even the mucosa, traversing transversely through them all. When an anastomosis is made no thread can be seen from the peritoneal side, which is in distinct contrast to the Maunsell suture, where the knot lies across the suture line. Dr. Connell, when he first described

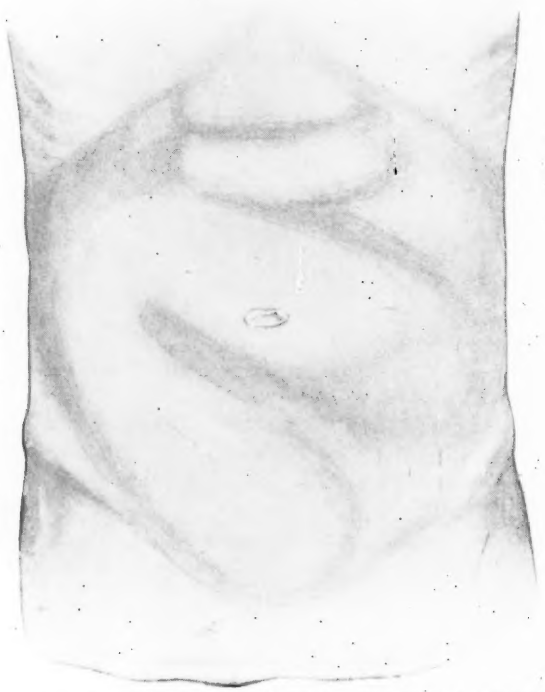

Fig. 4.—The outlines of the sigmoid, when greatly distended, as observed through the abdominal wall. This distension may occur when there is a tight stricture of the distal extremity of the sigmoid, or it may be produced by artificial inflation of the lower bowel, when the stricture is at the proximal end of the sigmoid.

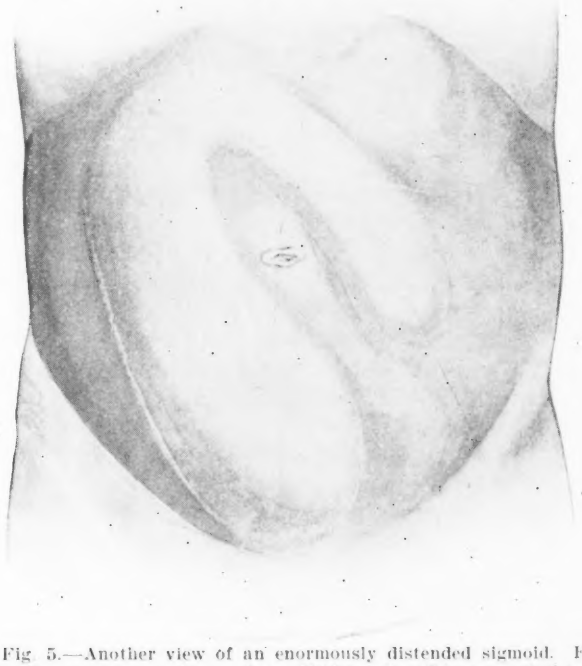

Fig. 5.—Another view of an enormously distended sigmoid. Figures 4 and 5 are redrawn from Nothnagel's "Diseases of the Intestines and Peritoneum."

this operation, gave the option between using the stitch continuously and using it interruptedly. Nine times out of ten Dr. Andrews used the suture continuously, making a back stitch about every fourth insertion of the needle. This prevents puckering and back-slipping. He was interested to note during a visit to the Mayo's clinic last fall that in performing pylorectomy, making the duodenal insertion, according to Kocher's method, they were using the Connell suture. He said that in Chicago and the West, the Connell suture has established itself most thoroughly.

DR. F. GREGORY CONNELL, Salida, Colo., said that the suture operation has resolved itself into the perforating and the non-perforating suture. The advantage of the perforating suture is its security. The disadvantage is a possible capillarity. This subject, the capillarity of intestinal sutures, he submitted to the section during this meeting and, therefore, did not discuss it further at this time. (THE JOURNAL, Aug. 11, 1906, page 405).

DR. L. FREEMAN, Denver, called attention to the comparatively favorable prognosis of cancers of the sigmoid flexure, and cited a case which came to his notice about a year and a half ago. The patient had, in addition to the carcinoma of the sigmoid, involvement of the urinary bladder and of the peritoneal surface of the abdominal wall, so that it was necessary, in removing the tumor of the bowel, also to remove quite a large portion of the bladder and peritoneum and to resect, perhaps, six inches of the colon. Notwithstanding this complication the patient is perfectly well. Eighteen months have elapsed since the time of the operation.

DR. A. MCGLANNAN, Baltimore, emphasized the importance of intermittent intestinal obstruction as a symptom of cancer of the bowel. Since Dr. Bloodgood called his attention to this symptom, about two years ago, he has seen it seven times in cases where a tumor was not palpable. In all these cases there was a history of intermittent obstruction, and in each instance a cancer of the large intestine of some kind was found at the operation. That seems to be a point in diagnosis, to be borne in mind in these cases.

DR. CHARLES STOLTZ, South Bend, Ind., has found that it is exceedingly difficult to determine the exact nature of the obstruction previous to operation. He had a case of this kind nearly two years ago, that of a woman, 42 years of age, who had suffered since childhood from intermittent obstruction. Finally, about December, 1904, her symptoms became so intense that she sought surgical assistance. It seemed that the obstruction followed periods of fatigue. On New Year's day, after entertaining at her home, she became unable to continue her household duties. When Dr. Stoltz first saw her she had symptoms which led him to believe that she had obstructive adhesions or a small umbilical hernia, especially because of the manner in which the umbilicus was pulled about with the violent intestinal peristalsis. However, on opening the abdomen there was no evidence of adhesions or of a hernia. At the beginning of the sigmoid, however, there was a constriction and a thickening of the bowel for about five inches, the lumen being as small as a lead pencil. There were several lesser constrictions about this point, but otherwise nothing abnormal was found. He did an ileosigmoidostomy and the woman was well for about six months, when symptoms of obstruction reappeared. Recently she took a long, restful trip. During all that time she had absolutely no signs of any disturbance. Her husband, who is a physician, said that she had never been in better health. She returned home, became tired again, and her difficulty recurred. He has been unable to decide on the exact pathology. Of course, it may be ulcer or non-malignant tumor, but the fact that fatigue brought on these attacks of intermittent obstruction and that they were absent during periods of rest is an interesting feature in the case and suggestive of a neurosis.

DR. J. B. BOUCHER, Hartford, Conn., said that a straight needle and a piece of linen thread are the best contrivances to be used for these cases, where there is time. In some cases, where the condition of the patient is such as to require rapid work, the Murphy button must be used. He has not had any experience with the opium or morphin splint, of which Dr. Dawbarn spoke, but it seemed to him that it might prove useful. Last year he reported six cases of resection of the bowel for cancer. Since then he has had two more, also five or six for non-malignant conditions, making thirteen or fourteen cases in all. In all these cases he used only the straight needle and the linen thread, and he has not had any mortality. Dr. Boucher thinks that in cases of cancer of the bowel the dissection should always be carried wide of the cancer. If a thorough resection is done, even desperate cases will recover from the operation and remain well for a number of years. He did a resection of the colon five years ago and the man is still living and well. The glands were enlarged clear into the pelvis and he could not get at all of them. It was a case of adenocarcinoma. Resection can be done as well, and nearly as rapidly, as anastomosis around the growth. It is strange that such patients seem to have immunity from infection to a certain extent, and their reparative power seems to be greater than that of the ordinary individual.

DR. J. A. MACMILLAN, Detroit, said that although resection of a portion or of the entire colon for chronic inflammation or ulceration has been advocated by Arbuthnot Lane and others for some time, he does not believe such extreme measures for these conditions will obtain the favor of the profession. It is possible that in very aggravated cases, in which stricture seems inevitable, a resection is justifiable, but even in such cases the ulceration should be taken care of first by more conservative methods. He believes that the rational method of treating these cases is by temporary colostomy. The physiologic rest obtained in this way is followed by rapid disappearance of the ulceration and inflammation, and when the healing process is complete the artificial anus may be obliterated.

DR. H. D. NILES said that it has become almost a habit with surgeons and internists to exclude all kinds of abdominal surgery, except in those cases that are attended by acute pain, tremor, febrile symptoms or acute obstruction. The treatment of ulceration is rest in some form. In regard to the favorable results obtained in operations on the colon, that has been the observation of all who have done much work on the large intestine, while the reverse is true in the case of the small intestine. It is surprising how many cases of malignant disease of the large intestine will survive an operation and live for years without a recurrence. He has used the Murphy button and some other appliances, and he would not like to say that he would never use them again, but gradually he has accustomed himself to do the suture operation and he likes it very much better. It has been quite a long time—years—since he used the Murphy button. He thinks that the linen thread undoubtedly is the best suture, but there is a linen, the celloidin linen, that is anhydrous. It does not soil or take up fluid or infection, and it seems to be the ideal suture material for intestinal work. He has used it and always with satisfaction. It is easier to do comparatively dextrous work with it than with any other material. The fact that it is anhydrous assures one that it is not likely to become infected, no matter what method of suturing is employed.

DR. A. F. JONAS said that the purpose of his paper was three-fold. First, to call attention to the necessity of early recognition of this condition; second, to outline the pathology; third, to restore the continuity of the bowel after it had been broken by removal of the growth. The question of early diagnosis here is exactly the same as that of early recognition of cancer of the pylorus. The trouble with the latter is that usually surgeons wait until they can feel a lump, and then when they operate they find extensive invasion of adjacent organs. The operative success may be good, but the result obtained is not a permanent one on account of early recurrence. The same is true of neoplasms of the colon. By waiting until the tumor can be felt, and sometimes nothing else can be done, the metastases have become so extensive that recurrence takes place very soon after the operation. So that it is of the greatest importance to make use of every diagnostic aid in order to establish at least a probable, if not an absolute, diagnosis in these cases.

The methods of re-establishing the continuity of the bowel that have given Dr. Jonas the best satisfaction are the closing of the ends of the intestine by a purse-string suture and then

making lateral anastomosis with suture, assisted by the Moynihan clamps, using an interrupted or continuous through-and-through suture. When the Connell suture is used there need be no fear of the tearing out of the sutures, providing the tissues are healthy. Dr. Jonas uses the Connell suture, assisted by the double loop mentioned in his paper. It is easy, rapid and safe, particularly if finally supported by a right-angle Cushing suture, and there is no danger of leakage.

TREATMENT OF ULCER OF THE STOMACH, WITH A RECORD OF CASES.*

HENRY F. HEWES, M.D.
Instructor in the Clinical Laboratory Harvard Medical School.
BOSTON.

In the treatment of ulcer of the stomach in its various forms we have to-day two general methods—medical treatment and surgical treatment.

In cases of simple, uncomplicated ulcer, that is, ulcer with or without hemorrhage, uncomplicated by permanent obstruction of the pylorus, or perforation, medical treatment offers an efficient, though not an absolutely certain, means of cure. This treatment gives in this class of cases almost universally good results as regards immediate relief or temporary and, if the treatment is thoroughly carried out, excellent results as regards permanent cure.

The efficiency of the treatment as regards the after-results or permanent cure is dependent to a large extent on its thoroughness. In cases in which treatment is completely carried out, that is, when strict treatment is enforced for a considerable period, a period of at least four months, and when a proper manner of living is pursued subsequently, complete cure may be expected in a large majority, probably 80 per cent., of the cases.

Surgical treatment of simple ulcer is capable of providing an efficient means of cure for the disease. The record of after-results or permanent cure in the cases which survive the effects of operation under surgical treatment is quite as good at the present writing, taking the grand average of cases, as that secured by medical treatment. Owing to the number of deaths which have occurred as the result of operation, the record of immediate results of surgical treatment is, however, much inferior to that obtained under medical treatment and the record of the grand total of final results, including the deaths present in the immediate results and the recurrences or failures to cure included in the record of after-results, of surgical treatment, is much inferior when we consider all the factors of benefit to the patient, the duration of life and the comparative freedom from symptoms of stomach disturbance, to that obtained under medical treatment. That is, the expectation of benefit to the patient, taking the average of all cases, is, by the verdict of the records received up to date, greater under medical treatment than under surgical.

The argument for surgical treatment in simple ulcer lies in the fact of the considerable number of recurrences which occur in medical cases, taking the average of all cases, those of individuals in good and poor circumstances, private cases and hospital cases alike, and in the deaths which result from such recurrence.

Even with this record of recurrence medical treatment is, or can be when it is thoroughly carried out, as the results prove, a satisfactory method. In the face of this efficiency of medical treatment there can be, it seems to me, no excuse for the employment of surgical treatment with its equal liability to failure to cure, and the additional chances of death, which the records show to be associated with this treatment, in place of medical treatment in the initial treatment of cases of simple ulcer. When surgery can show better average results as regards both duration of life and permanent cure it may justifiably replace medicine in the treatment of this disease. At present it is to be considered in connection with this class of cases, only in cases which have failed to find relief or have recurred after being subjected to good medical treatment.

In cases of chronic ulcer complicated with disturbance of the ability of the stomach to empty its contents into the duodenum, that is, cases of obstruction of the pylorus, or contraction of a part of the stomach wall from ulcer, causing a permanent gastrectasis, medical treatment gives very unsatisfactory results as regards the cure of the combined condition. Under such treatment patients with this affection may, in many instances, regain comfort as regards symptoms, health, strength, weight, and ability to work, and may keep this gain as long as treatment is continued. Permanent cure, that is, absence of stasis and symptoms of discomfort for an indefinite period after the cessation of treatment is, however, rarely accomplished by this means.

Surgical treatment, on the other hand, gives excellent results as regards permanent cure in this class of cases. There are, it is true, a certain number of failures to cure or of recurence symptoms, and a certain number of deaths from operation under this treatment. In a large majority of cases, however, the treatment gives excellent results, and in consideration of this latter fact, together with the fact of the inefficiency of medical treatment to provide cure for this condition, surgical treatment should, it seems to me, be advised in all cases of this type, once the diagnosis is definitely determined.

The only argument against this procedure lies in the fact that the chances of an establishment of a fair condition of health and comfort under a continued medical treatment are fairly good, and that death under such conditions is a very rare occurrence, while under surgical treatment, though the chances of cure are excellent, there is always the risk of death as the result of operation. If the patient prefers the kind of comfort which can be obtained in a life of continued treatment, there is nothing more to be said. Excellent condition can often be maintained in this way and exacting treatment is not always necessary to such maintenance. On the whole, it seems to me that, as a rule, surgical treatment is good medical advice in these cases.

For the treatment of cases of ulcer not included in the above classes, that is, cases complicated by perforation, whether the case be one of acute perforation or one in which perforation having occurred at some previous time and adhesions between the stomach wall and the surrounding tissues having been established, symptoms of stomach disturbance are still present, we have but one form of treatment, surgical treatment.

In support of these conclusions in regard to the efficiency of our modern methods of treatment of ulcer of the stomach in its various forms, I present a record of the results of treatment of the cases of ulcer of the stomach which have been under my observation and care during the last ten years. The record is made up of all cases of ulcer treated by me in private practice and such hospital cases as have been under my observation

* Read in the joint session of the Sections on Practice of Medicine and Surgery and Anatomy of the American Medical Association, at the Fifty-seventh Annual Session, June, 1906.

both during and after their sojourn in the hospital. Only such cases are included as have been under observation for a period of at least two years subsequent to the time of the initial treatment. Many of the cases have been followed for a much longer period.

In the first class of cases, those of simple, uncomplicated ulcer, I have included only such cases as have a record of bleeding, that is, a history of hemorrhage or a finding of blood either in the gastric contents or feces, for the reason that without such evidence (the bleeding) the existence of simple ulcer can not, save possibly in rare cases, be accurately determined, and I wish to include in my record only cases of undoubted ulcer. Cases diagnosed as ulcer at the time of the initial treatment, which have subsequently been proved to be cancer, have not been included.

In studying these records of cases of simple ulcer I have noted a fact of which I have for a long time been aware, the fact of the much greater superiority, on an average, of the results of treatment of ulcer in individuals in comfortable circumstances to those obtained in individuals of limited circumstances, as, for example, the average of hospital cases, independently of the initial severity of the cases. These results are explained, I think, by the greater facility of the first class of individuals, through their easier circumstances and their greater intelligence to carry out a thorough treatment for a long period.

It is my custom in all cases of ulcer treated medically to insist on a continuation of strict régime as to diet and rest for a period of at least four months and to advise a certain precaution as to regimen for a much longer period. This thorough regimen can not, as a rule, be carried out with strictness by poor people, the necessities of their life, the requirements of work and the lack of facilities of obtaining proper food or proper surroundings, prohibiting it. As a result they do not do as well, on the average, as their better circumstanced colleagues in misfortune.

As it is the records of those cases which thoroughly fulfill the requirements of treatment which best serve as a criterion of the efficiency of the treatment, it seems to me that the real efficiency is to be judged to a certain extent, at all events, by the results obtained in these selected cases rather than by the record of all cases. I have, therefore, included in my summary of the cases of simple ulcer treated medically, in addition to the record of all cases, a separate record of the results of the cases which received the complete regimen.

1. Cases of Simple Ulcer of the Stomach Treated Medically.—There were 51 of these cases. The immediate results were: Complete relief (cure of hemorrhage and other symptoms), 48; failure in relief of symptoms for any length of time, 2; died (from hemorrhage while under medical care), 1.

The two patients whose symptoms were not relieved were afterward operated on. Both showed evidence of a former perforation with adhesions of the stomach over the site of perforation to the anterior abdominal wall. One died shortly after operation. The other recovered from the operation by excision and has been well since.

The after-results in 49 cases were: Cured (no recurrence of symptoms within two years), 31, or 63 per cent.; recurrence (of stomach symptoms), 18, or 36 per cent.; died (from ulcer), 1, or 2 per cent.

Among the 49 patients there were 16 only who carried out the complete treatment described, that is, who continued under a strict régime as to rest and diet for four months. The remaining 33 cases remained under strict treatment for periods of from one to two months only

The record of after-results in these two sets of cases is as follows: In the 16 cases which received complete treatment there were: Cured, 13, or 80 per cent.; recurred, 3, or 18 per cent; died, 0. In the 33 cases which received treatment from one to two months there were: Cured, 18, or 54 per cent.; recurred, 15, or 45 per cent.; died, 1.

The cases included in both sets were all cases of bleeding ulcer and, on the average, of equal severity. The less good results obtained in the cases in which treatment was continued for two months only indicate, I think, not an inherent lack in the possibilities of medical treatment, but the necessity for the provision of a thorough treatment in all cases. The difference in the results in the two sets of cases was, in all probability, not due entirely to the lesser duration of strict treatment in the latter set, but in part to the fact that the patients took less good care of themselves during the period subsequent to that of the strict treatment.

2. Simple Ulcer Treated Surgically.—There were 13 cases of simple ulcer treated surgically. All were cases in which a failure to relieve symptoms or a recurrence had occurred under or after medical treatment. The results of treatment were as follows: Cured (no recurrence of symptoms within two years), 6, or 46 per cent.; recurred; not relieved by operation, 3, or 23 per cent.; died (shortly after operation), 4, or 30 per cent.

The number of surgical cases in my record is too small to allow of any definite conclusion in regard to results as compared with the results of medical treatment. These facts of importance are brought out by the record:

First, the fact that surgical treatment does serve as an efficient means of cure of simple ulcer. Thus, of the 9 cases surviving operation, 6, or 66 per cent., were completely cured.

Second, the fact that recurrence or failure to relieve symptoms does occur after operative treatment. Thus, among 9 cases which survived there were 3, or 33 per cent., of recurrence of stomach symptoms.

Third, the fact that death from operation is a not uncommon associate of surgical treatment.

3. Chronic Ulcer with Gastrectasis.—There were 26 cases of chronic ulcer with gastrectasis. The list includes only cases of chronic gastrectasis in which there was evidence that the cause of the stasis was ulcer and not cases of temporary stasis due to acute ulcer. Of the 20 cases treated medically there were: Cured (no symptoms or stasis during a long period without treatment), 0; relieved (able to avoid discomfort and keep in physical condition by constant application of medical treatment), 17, or 85 per cent.; not relieved, 3, or 15 per cent.; died under medical treatment, 0.

A number of patients after pursuing a course of treatment have been able to go for periods of from one to three months without treatment, but a return of symptoms has occurred in every instance.

The following are the results of the 14 cases treated surgically: Cured, 9, or 64 per cent.; recurrence or failure of relief, 3, or 28 per cent.; died shortly after operation, 2, or 14 per cent.

Although, as I have stated, the facts are in favor of medical treatment and against surgical procedure for the initial treatment of simple ulcer of the stomach in the average of cases, there are certain cases where this

principle is not to be strictly maintained. Occasionally in practice we meet with cases of stomach disturbance in which a diagnosis of either ulcer or cancer is suggested, and in which there is reason to believe from the character and duration of the symptoms that the latter condition, if present, may be so little advanced that the complete eradication of the disease may be accomplished by surgical procedure. In such cases it seems to me that immediate operation is justifiable. It is true that only in rare instances is it possible to eradicate cancer by operation. Cases of this kind do, however, occur and it is by following this line of procedure that we are likely to find them. The following case-report illustrates this point:

History.—The patient, a man aged 50, came to me in 1904. He complained at the time of a dull pain in the epigastric region present much of the time, and slightly aggravated by ingestion of food, loss of appetite and frequent desire to raise gas from the stomach. There had been no vomiting or other symptoms. There was loss of weight. The duration of the symptoms was three months at the outside.

Examination.—Physical examination other than the examination of the gastric contents showed nothing abnormal. The hemoglobin was 85 per cent. Examination of the contents of the fasting stomach, obtained by tube 12 hours after the ingestion of food, gave the following findings: Quantity, 25 c.c.; character liquid, like the white of an egg, and colorless; no food remnants were present. The guaiac test for blood was positive. Contents gave no fermentation test with glucose. Lactic acid was absent. The contents obtained one hour after an Ewald test breakfast gave the following characteristics: Quantity, 100 c.c.; food fairly digested; free HCl present, quantity low, .007 per cent.; blood present by guaiac test.

A similar finding to that given above was obtained in the fasting contents on four separate examinations. In each instance a positive blood test was obtained. No fresh blood was seen. The feces showed blood by the guaiac test.

Operation.—The case was recommended for operation with a diagnosis of either ulcer or cancer. Operation was performed by Dr. Greenough, Oct. 14, 1904. At operation a small nodule with a slight ulceration on its surface was found in the antrum pylori. No enlarged glands were found. The nodule was excised and a pyloric resection performed.

Pathologic examination of the excised mass showed the presence of carcinoma.

The patient had a good immediate recovery and in the interval of 18 months since operation has been well. He has regained his normal weight and held it, works regularly, and has suffered from no dyspeptic symptoms. In this case the early operation was advised for the following reasons: The constant blood findings showed the probable presence of ulcer or cancer. The general picture of the symptoms was more suggestive of cancer than ulcer. The short duration of symptoms suggested that if cancer were present it might be so little advanced that the disease could be entirely eradicated by operation. Whether or not the disease has been entirely eradicated is, of course, still an open question. At all events the patient has enjoyed two years of perfect health as the result of our procedure.

ETIOLOGY AND DIAGNOSIS OF GASTRIC AND DUODENAL ULCER.*

FRANK BILLINGS, M.D.
CHICAGO.

Acute gastric ulcer and the so-called abrasions of the mucous membrane of the stomach are identical in their morbid anatomy and pathology. As a rule these are superficial and extend wholly or through a part only of the mucosa. They are not uncommon and many occur in chronic circulatory disturbances due to heart and arterial disease and to cirrhosis of the liver. They may be postoperative events, especially in abdominal section. They appear in cachectic states due to chronic diseases and are not infrequent in the new born. They may appear in certain neurotic conditions, especially in women.

These acute erosions are soft, sometimes blood stained, often multiple, frequently consist of mere slits in the mucous membrane, may be so small as to escape detection and usually would not exceed 4 mm. in diameter. The largest may be dignified by the name of an ulcer. These acute processes are important only when the erosion involves an artery or vein of considerable size, when a fatal hemorrhage may occur. These acute processes will not be further considered in this paper.

ETIOLOGY.

Chronic ulcer of the stomach and duodenum, frequently termed round, perforating or peptic ulcer, follows nutritional disturbance of a limited area of the mucosa, which results in the destruction of this circumscribed region by the gastric juice. The gastric juice is the destructive agent and, therefore, plays the most important rôle in the causation of ulcer of the stomach and duodenum.

The cause of the condition which permits the gastric juice to attack a part of the mucous surface of the stomach or duodenum is not altogether clear. Probably several conditions may be important factors. It is probable that in certain instances vascular disease in the form of thrombus or embolism, with or without antecedent disease of the wall of the vessel, may be a cause. It is equally true that this condition is not present in the majority of the individuals who suffer from ulcer.

Hyperacidity of the gastric contents, with or without stagnation, is a common accompaniment of ulcer, but it is probable that it is an accompaniment and not a cause of the disease. Chlorosis has been noted in ulcer of the stomach, especially in the young female, but many cases of ulcer occur without anemia and the anemia, when present, is very frequently the result of the loss of blood incident to the ulcer. Central or pneumogastric nerve disease has been ascribed as a predisposing cause, but the evidence is not conclusive. Local ischemia from muscular spasm, especially in the pyloric region, thus predisposing the circumscribed area to destruction by the gastric juice, has been ascribed to this nervous influence. Traumatism from external violence or local traumatism from the contact of rough particles of food on the mucous membrane, and especially in the pyloric region, has been ascribed as a cause. It is known that small traumata of the normal mucous membrane heal rapidly and trauma alone is, therefore, probably not a cause. Stasis of stomach contents with decomposition has been ascribed as a cause, and it doubtless is a factor, especially when associated with bacterial infection. Bacterial infection with invasion of the mucous membrane may so reduce the nutrition of the cells as to render them liable to digestion by the gastric juice. Recently Dr. Fenton B. Turck, Chicago, has been able to produce a typical chronic ulcer of the stomach by feeding dogs with colon cultures over a considerable period of time.

Self-digestion does not occur in a healthy stomach because of a resistance of the normal cells which has heretofore been called vital. It has been suggested that this resistance is, in reality, the presence in the cells of the stomach of an antibody. Under certain conditions this antibody may disappear or may be so disturbed that it no longer protects the mucous membrane in certain localities permitting the gastric juice to attack the tissues.

* Read in the joint session of the Sections on Practice of Medicine and Surgery and Anatomy of the American Medical Association, at the Fifty-seventh Annual Session, June, 1906.

To sum up our present knowledge of the cause of ulcer, it is that the gastric juice is the active agent in its production in a limited area and that this occurs because of a nutritional disturbance in a circumscribed region of the mucosa. That the nutritional disturbances may be brought about by bacterial infection associated with local trauma and that vascular disease, local areas of muscular spasm, gastric stagnation and anemia may all serve as factors in certain instances.

DIAGNOSIS.

In a classic case of ulcer there are three chief diagnostic signs. These are, in their order: pain which is usually felt in a localized area and is aggravated by a palpation and by food; second, hematemesis or melena; third, hyperchlorhydria and the some time evidences of gastric stagnation.

The pain of ulcer is characterized by the fact that it is usually felt in the localized area and that it frequently appears to the patient to pass through the body, to be felt in the back, usually on the left side near the spine at the eleventh or twelfth rib. The pain is often periodic, appearing for a day or days with severity and may be followed by an interval of less discomfort varying from days to weeks to months or even years. With the pain there is a localized tenderness which is very severe and is usually situated in the epigastrium. The pain is frequently aggravated by food. In certain instances this occurs immediately after food enters the stomach and in others not for one, two or even three hours after food is taken. The pain frequently continues until the stomach is evacuated by vomiting or until the food has passed through the pylorus. Not infrequently one obtains a history of attacks of acute exacerbations of pain extending over a period of years. These exacerbations are frequently attended with vomiting of food, with or without the appreciable appearance of blood. Frequently such patients are said to have dyspepsia, with the appearance periodically of neuralgia of the stomach.

Hematemesis and melena occur in fully one-half the cases of ulcer of the stomach. The vomited blood is usually dark in color, acid in reaction and is clotted. When passed by the bowel it is frequently tar-like in consistency and color. The occurrence of blood in vomited material and in the stool in an individual who has suffered from dyspeptic symptoms, and especially if he has had pain, is an important sign of ulcer. Occult blood may be detected in the stomach contents and in the stools from all patients who suffer from ulcer of the stomach. The appearance of occult blood usually is not constant, but will always be found if the tests are applied over a sufficiently long period of time. The Weber test for occult blood is a practical one and is reliable when safeguarded by the exclusion of the contamination of the stomach contents and of the stool, by blood from other sources, than the stomach and duodenum. The presence of iron taken as medicine and excreted in the stool will give a blue line resembling the blue line of the presence of blood when peroxid of hydrogen is used in the Weber test.

Hyperchlorhydria is present in the majority of ulcers of stomach and of the duodenum. In a small minority of patients with ulcer there may be a normal or subnormal amount of HCl or an entire absence of it in the stomach contents. In many conditions, especially neurotic in character, hyperchlorhydria exists without ulcer. Therefore, the occasional absence of hyperchlorhydria in ulcer, and the fact that it frequently occurs in neurotic conditions, makes it less reliable as a diagnostic sign in ulcer. Hyperchlorhydria with evidences of pain as indicated above and with the presence of blood, either evident or occult, in the stomach contents and the stool, however, is a positive sign of ulcer. Hyperchlorhydria with gastric stagnation and especially if the fasting stomach shows the presence of a considerable amount of acid secretion, is also of importance in the diagnosis of ulcer.

Chronic ulcer is often latent, and, if latent, one or all of the signs given above may be absent. Frequent intervals of latency follow periods which present the above symptoms. A careful investigation of the history of the patient will frequently enable one to elicit a history of attacks of acute dyspepsia associated with pain followed by intervals of latency with little or no symptoms of indigestion. In the latent state an ulcer may be partially or completely healed and the subsequent acute attack be due to a recurrence of the ulceration or to the formation of a new ulcer. In the latent period a careful examination will show, as a rule, undue epigastric tenderness; will usually show hyperchlorhydria, and, if the ulcer be unhealed, occult blood in the stomach contents and stool. Not infrequently, too, the latent condition will be accompanied with the secretion of an usual amount of acid gastric juice within the fasting stomach.

Duodenal ulcer is not infrequently associated with gastric ulcer, and its etiology is probably the same. Ulcer occurs in the duodenum between the pylorus and the papilla of the bile duct. So situated, its position is so near the pylorus that it produces practically all of the symptoms of the gastric disease, with the exception that usually melena alone and no blood vomiting occurs.

Chronic ulcers of the stomach occupy, in the great majority of cases, the pyloric half of that organ and the largest number of them appear on the posterior wall. When near the pylorus, the saddle ulcers, so called, may occur, and in some instances they may cover a very large surface. When near the pylorus they cause tonic contraction of the stomach, involving the pyloric end of the stomach with resulting stenosis. Stagnation of stomach contents results with, at first, hypertrophy of the muscle of the stomach wall. Chronic ulcer involves the deeper structures of the stomach wall and may have at its base the submucosa, the muscle or the thickened peritoneum which frequently becomes adherent to some neighboring organ. The scar resulting from partial or complete healing of an ulcer, the infiltrated and thickened wall of the stomach or pylorus and the perigastric adhesions frequently produce disturbances of motility which result in symptoms of great importance in the diagnosis of ulcer. Given a history of dyspepsia with pain, tenderness, hematemesis or melena, or of occult blood in the stomach contents and stool, hyperchlorhydria with evidences of gastric stagnation, if after a full meal the stomach does not become practically empty in seven hours and if the stagnant element is hyperacid and if it contain undigested starch cells, ulcer of the stomach or of the duodenum near the pylorus is present.

DIFFERENTIAL DIAGNOSIS.

Cholecystitis, with or without gallstones, may simulate ulcer of the stomach. Such an attack is associated with more or less severe pain in the epigastrium which may radiate to the right shoulder. There is usually marked tenderness in the region of the gall bladder, which, when pressed on, causes a pain which usually radiates to the epigastrium. Hyperchlorhydria may be present, but in uncomplicated cases blood is absent from the stomach contents and from the stool. With adhesions between

the gall bladder, the liver and the pylorus, motor disturbances of the stomach may be present. In the interval between the attack of cholecystitis there may be some tenderness in the gall-bladder region and especially if sharp percussion be made over a limited area. This tenderness is more characteristically elicited if the stomach is first distended with gas. When cholecystitis is associated with jaundice and evidences of general infection manifested by chill and febrile disturbance, the diagnosis is more plain.

In pyloric stenosis from simple hypertrophy, there is not the severe pain of ulcer nor is there usually the frequent hyperchlorhydria of ulcer. Simple hypertrophy occurs most frequently in the new born. The differentiation of pyloric stenosis from simple hypertrophy can be made usually from the history, which will elicit the fact that the patient suffered at some time in his life with the characteristic symptoms of ulcer.

Cancer of the stomach, especially of the pylorus, may present difficulties in diagnosis, for the reason that not infrequently cancer is engrafted on an ulcer base. When this occurs the history of the patient will frequently be characterized by the symptoms of ulcer with usually a latent period preceding the development of the neoplasm. In such cases there may be the pain, the tenderness and the hyperchlorhydria of an ulcer and usually the presence of a palpable tumor. As ulcer of the stomach may cause infiltration of the stomach wall and of the pylorus to a degree which will afford a palpable tumor, the diagnosis would necessarily be in doubt in such cases. In cases of sufficiently long standing, metastatic growths in the liver and in the palpable lymph glands, especially those above the clavicle, the cachexia, the anemia and the presence of decomposing stomach contents, containing lactic and other organic acids and the Oppler-Boas bacillus, would enable one to differentiate the disease from ulcer.

NEUROSES OF THE STOMACH.

Neuroses of the stomach are very common in everyday practice. They may be associated with sensory, secretory and motor disturbances. There may be severe pain and burning, hyperchlorhydria, vomiting or spasm of cardia or of the pylorus. In uncomplicated cases, blood, both apparent and occult, would be absent from the stomach contents and feces, but the other conditions named may be so severe that it will require a study of a considerable period of time to enable one to say that ulcer is not present.

Attacks of gastric crisis in the course of locomotor ataxia have been mistaken for ulcer of the stomach. There should be no difficulty in recognizing the fundamental cord disease if a careful examination is made.

The referred pain of appendicitis may appear in the epigastrium with the association of nausea, vomiting, etc. It may be mistaken for perforating ulcer, but should never be mistaken for uncomplicated ulcer.

The Dietl phenomenon occurring with floating kidney is associated with epigastric pain, nausea, vomiting, etc. It should not confuse the observant clinician.

The abdominal and sometimes epigastric pain of pneumonia and of pleuritis will not be mistaken for ulcer by one who examines his patients.

Ulcer of the stomach and duodenum is not an uncommon disease. When the classic symptoms are present, the diagnosis can be easily made. When the disease is latent and when it is masked by conditions, the result of a neurotic temperament, the diagnosis may be difficult. Sufficiently long study of the patient and of his history, of the chemical constituents of the stomach contents, of the motility and, finally, the test for occult blood in the stomach contents and in the stool, will enable one to arrive at a definite diagnosis in most individuals.

GASTRIC AND DUODENAL ULCERS.

WHEN DO THEY REQUIRE SURGICAL TREATMENT AND WHAT PROCEDURES ARE NECESSARY?*

W. L. RODMAN, M.D., LL.D.

Professor of Surgery, Medico-Chirurgical College; Professor of Surgery, Woman's Medical College of Pennsylvania.

PHILADELPHIA.

We may say that surgical opinion has crystallized on some phases of ulcer, is crystallizing upon others and in some phases is still chaotic. The treatment of such complications as perforation and subphrenic abscess admits of no discussion whatsoever and may definitely be put to one side. Both must be met by prompt operative procedure, and it is not a question of whether to operate, but how. So far as hemorrhage is concerned there is honest room for doubt, and the variety of ulcer, its acuteness or chronicity, the amount of the hemorrhage, its recurring nature and the size of the vessel involved must be considered before a conclusion can finally and rightly be made. There is a greater difference of opinion between internists and surgeons as to the treatment of non-perforating, non-hemorrhagic ulcers with disabling adhesions and other gastric disturbances, purely mechanical in nature, following in their wake.

PERFORATION.

It is not to be questioned that spontaneous recovery may take place in perforation of either a gastric or duodenal ulcer, but in admitting the possibility of such an occurrence we should not, by accentuating it, make it appear even remotely probable.

Perforation is best considered by subdividing it into acute, subacute and chronic.

By acute perforation is understood a sudden communication between the stomach and peritoneal cavity, when the stomach is full of fluid and solid contents; extravasation necessarily occurs and the effects are usually instantaneous and overwhelming. By subacute perforation is understood a more insidious process, or, if as sudden, occurring when the stomach is empty. In either event extravasation into the peritoneal cavity will not occur, or if it does, to a most limited extent. Here a neighboring piece of omentum or coil of intestine may instantly cover the small opening made and effectually prevent extravasation. By chronic perforation a much slower and more stealthy process is understood. Here the plastic exudate limits the extravasation and a subphrenic abscess results. It should be treated by drainage, employing the abdominal, lumbar, or transpleural route, according to the preference of the surgeon and the exigencies of the case. A majority favor the abdominal route, some the combined abdominal and lumbar, while Körte, who has had a vast experience with subphrenic abscesses, prefers the transpleural route.

I have seen three unquestionable cases of subacute perforation resulting in spontaneous recovery. Two were confirmed by exploration when gastroenterostomies were subsequently done. I am of opinion that perforations acute and subacute are far more common than

* Read in the joint session of the Sections on Practice of Medicine and Surgery and Anatomy of the American Medical Association, at the Fifty-seventh Annual Session, June, 1906.

formerly believed and my reasons for such belief are the comparative frequency of operations at the present time for perforation in latent ulcers where the disease previously had not even been suspected. (The symptoms of ulcer are at times either so masked or completely wanting that the disease is overlooked by the best physicians). Secondly, and more to the point, demonstrable and dense adhesions are found at the site of perforation, which could not have occurred except as a result of severe perigastritis following perforation. I was both interested and amazed to find that in twelve successive gastroenterostomies performed by W. J. Mayo during ten days recently passed with him, in three cases the evidence was sufficiently convincing to this careful and judicious surgeon to cause him to record them as having previously perforated. Not less interesting is the fact that eight of the cases were operated for duodenal, three for gastric ulcer, and one for a large ulcer involving both pylorus and duodenum. The ulcer was not only found in each case but it was easily demonstrable to every one present. Duodenal ulcers are far more common than we have hitherto thought and in the Mayos' experience are practically as common as gastric. My own more limited experience leads me to the same conclusion: three of the four last operations I did were for duodenal ulcer, near the pylorus it is true, and would formerly have been designated pyloric. They are practically always within one inch of the pylorus.

Chronic perforations occur on the posterior wall and at the lesser curvature of the stomach. Per contra, perforations of the acute variety are generally found on the anterior wall. In operating for perforative gastric and duodenal ulcer there are several questions to be considered and they should be decided by the exigencies of each case.

Shall the ulcer, when found, be excised? A few favor excision but a majority do not. The tissues are necrotic, uncontrollable hemorrhage may be started, and extravasation into the cavity further increased by the manipulations necessary in excising a perforated ulcer. A few interrupted Lembert's sutures, infolding the perforation, will best meet the indications if supplemented with an omental graft. If the omentum can not be utilized in this way, gauze should be used both to protect the opening and for drainage. If the extravasation has been limited mopping will suffice, drainage, however, should usually be employed. If the perforation has been acute and the general cavity has been contaminated by gross quantities of gastric contents, lavage should be thoroughly made and supplemented by suprapubic drainage. Here the Fowler position and constant irrigation of the rectum with normal salt solution, are of the greatest value. It is rarely wise to supplement suture of a perforated ulcer by gastroenterostomy. If the ulcer be at or near the pylorus, so that the infolding of the perforation results in pyloric stenosis, then, and only then, would it seem best to perform gastroenterostomy. By the time a perforation is satisfactorily closed and the toilet of the peritoneum completed the condition of the patient will not encourage, if indeed warrant, further operative measures.

Should suturing, excision, resection, or pylorectomy all be impracticable, as is occasionally the case, on account of necrotic tissues or bewildering, if not insuperable adhesions, a tube should be placed in the bowel, distal to the perforation and brought out of the stomach as in Witzel's gastrostomy. The operative results for perforation have not been as satisfactory as they should, yielding a mortality of rather more than 50 per cent. English reports 50 consecutive operations at St. George Hospital, London, with a mortality of 60 per cent. F. and G. Gross' statistics include 369 operations with 187 deaths (50.67 per cent).

These cases analysed show:

First, 12 hours, 88 cases, 22 deaths, 25 per cent.
Twelve to 24 hours, 55 cases, 29 deaths, 52.72 per cent.
Twenty-four to 48 hours, 63 cases, 36 deaths, 56.06 per cent.
After 48 hours, 31 cases, 25 deaths, 73. 91 per cent.

The best results followed operations done between the fifth and tenth hours, as the mortality was 16.25 per cent. With early diagnoses and prompt operations the mortality should, in the near future, be reduced to 15 or even 10 per cent. The extravasated gastric and duodenal contents are frequently sterile, therefore cause a less virulent and septic peritonitis than perforations of the small and large intestines, and should give better operative results. Moreover, perforations of the intestines usually occur in typhoid patients, unable to withstand both the primary shock and subsequent operative procedure.

HEMORRHAGE.

The frequency with which hemorrhage, as a symptom of gastric and duodenal ulcer is found, varies greatly according to different authorities. It is a marked symptom in at least 50 per cent. of all cases. If the gastric contents and stools were carefully examined macroscopically and microscopically from day to day the probabilities are that it would be found in nearly every case. To give some idea as to the importance of hemorrhage as a complication of ulcer we may say that in a city of 1,000,000 inhabitants, fifty thousand (5 per cent.) will suffer from gastric ulcer. Of this number one-half will bleed from time to time, and in four thousand cases (8 per cent. of those with ulcer) the hemorrhage will be lethal.

We must, so far as we can, differentiate between hemorrhages following acute and chronic ulcers, respectively. The former are not recurrent as a rule, and are usually recovered from. The diagnosis of hemorrhage, associated with acute ulcer, can generally be made, as it occurs in young anemic women in the majority of instances. It is due to a superficial erosion of the mucous membrane, the exulceratio simplex of Dieulafoy, but may be due to the perforating ulcer of Cruvelhier. The hemorrhages occur, as a rule, without warning, and while marked and causing extreme anemia in certain instances, promptly yield to medical treatment. Surgical intervention is wholly unnecessary. Of all the remedies employed for arresting such hematemeses none acts so promptly and certainly as hot water (temperature 120 to 130) introduced through a stomach tube. I have seen the best results follow its use where all other agents had proven futile and life was practically despaired of.

HEMORRHAGE FROM CHRONIC ULCER.

The bleeding from a chronic ulcer is essentially recurrent. In considerably more than 50 per cent. of all cases it is due to ulceration into a vessel of some size, namely, the splenic, pancreaticoduodenal or coronary arteries, or their arterioles, in the order named. The size of the vessel involved makes it unsafe to depend upon Nature to arrest the hemorrhage, or on simple measures which may be entirely sufficient where the oozing is from capillaries. The surgeon will usually see the case too late to act during the first hemorrhage. Should he do so, it is best to wait until the recurrent nature of the hemorrhage has been established. During a second severe hemorrhage it may be unwise to operate. As soon,

however, as the patient has sufficiently recovered from shock, it is certainly best, to prevent other hemorrhages, which may now be looked on as reasonably certain. There are two ways of controlling the hemorrhage, the direct and indirect methods. In the former, the hemorrhage having been located, the bleeding point is excised, ligated, cauterized, or otherwise treated. In the latter method the stomach is made to contract, emptied of its contents and placed relatively at rest by means of a gastroenterostomy or jejunostomy. No one can doubt that the first, or direct method is more efficient and prompter. Where the ulcer can be located and there are no prohibitive adhesions, I should invariably seek to control hemorrhage by the direct method. If there is no tumor, no thinning or discoloration of the gastric walls to indicate the probable source of the hemorrhage, gastrotomy may be practiced, the entire stomach being carefully examined through a Ferguson's speculum with an electric light, and, the bleeding point, if found, treated.

Should the search prove futile, as it often will, the opening made into the stomach may be utilized in doing a gastroenterostomy, which will frequently, though not always, be sufficient to effect hemostasis. Of the direct methods of treating hemorrhage, excision or partial gastrectomy is the most satisfactory, preventing as it does future hemorrhages, perforation and malignant degeneration. Next to it I place simple gastrotomy followed by ligating the mucous membrane en masse, so as to draw up a well-marked cone after the method advised and successfully practiced by Andrews. Transfixion of the bleeding surface with careful ligation has often succeeded. Cauterization not only seems to me unsafe theoretically but has been followed by subsequent perforation in several cases. I wish to dissent most positively from the optimistic statement which has been made by those high in authority, that gastroenterostomy will surely and quickly relieve hemorrhage. A sufficient number of cases have been reported by competent and trustworthy surgeons from all parts of the world to lessen the estimate in which it has been held, if, indeed, they do not wholly discredit it as an efficient remedy. That gastroenterostomy will generally relieve capillary bleeding or hemorrhage from arterioles is likely; that it will arrest hemorrhage from a vessel of considerable size which has been eroded laterally, making contraction and retraction within its coats impossible, is to say the least, questionable.

Fatal cases of hemorrhage after apparently successful gastroenterostomies have been reported by Mayo, Deaver, Kocher, Robson, Moullin, Connell, Czerny, Rydygier, Kümmell, and many others—von Eiselsberg losing three cases and Körte two. Anatomy and pathology are not to be forgotten and it is unreasonable to expect hemorrhage from a vessel of considerable size, with a lateral opening into its caliber, to be arrested by anything short of direct surgical measures. Three months ago I operated for duodenal ulcer, performing a posterior gastroenterostomy without a loop and subsequently the patient lost one gallon of blood. I have never seen such furious hematemesis and melena. Morphia, ice and astringents failed to make any impression whatever on the bleeding, which was finally arrested, when the patient was pulseless and almost in articulo mortis, by introducing a stomach tube and pouring a pint of very hot water into the stomach. During the past 4 months there have been frequent bleedings, none of them, however, severe. They are becoming less frequent, rarely amount to more than three or four ounces and will probably cease altogether with the healing of the ulcer. She has been a difficult patient to control and could not be kept on liquid diet; in fact, has at times eaten most imprudently and nearly every attack of hematemesis has been preceded by acute indigestion caused by gross indiscretions in diet.

CURATIVE TREATMENT OF ULCER.

We now come to the treatment of ulcer itself apart from such complications as perforation, hemorrhage and subphrenic abscess. Acute ulcers, occurring as they generally do, in young anemic women, tend to heal spontaneously and should be treated strictly by medical means. Chronic ulcers, usually occurring in men past forty, show much less tendency to heal under medicinal and dietetic treatment and when they seem to do so the cure is usually not abiding. The statistics of 500 cases treated at the London Hospital show that about 50 per cent. were uncured by medical means, and of those discharged as cured, one half relapsed. The results secured at the Massachusetts General Hospital are entirely in accord with those of the London Hospital. Is it, therefore, to be wondered why an increasing number of patients with gastric ulcer tire of medical treatment and seek surgical aid. It is well to recall at this time that the mortality from the medicinal treatment of ulcer is at least 25 per cent. (13 per cent. from perforation, 8 per cent. from hemorrhage, the balance from anemia, phthisis, etc.). If we exclude acute ulcer, which, we admit, tends to heal spontaneously as a rule, it will be found that the mortality under the medical treatment of chronic ulcer is perhaps actually greater than 50 per cent. I would, therefore, insist that medical treatment in chronic ulcer be not persisted in longer than four weeks, the limit given by Leube, the most optimistic of medical men, for if it has not succeeded by this time it almost surely will never succeed. Having decided upon surgical intervention it becomes necessary to choose between methods of relief. Of these, pylorectomy, or excision of the ulcer-bearing area, partial gastrectomy, gastroenterostomy, pyloroplasty and jejunostomy may be fairly considered. If the ulcer or ulcers are situated near the pylorus, as they will be in 80 per cent. of all cases, pylorectomy, or excision of the ulcer-bearing area should undoubtedly be given the preference, provided the pylorus is free from adhesions or can easily, along with the upper portions of the duodenum, be mobilized. It alone successfully deals will multiple ulcer, gastric and duodenal, prevents perforation, hemorrhage, disabling adhesions, stricture, hour-glass contraction and malignant degeneration. Moreover, it leaves the stomach in the best condition for its future usefulness. The strongest reasons in favor of pylorectomy are the multiplicity of the ulcers and the great danger, hitherto scarcely appreciated, of cancerous implantation upon the base of the ulcer. That Hauser, who estimated that 6 per cent. of gastric ulcers subsequently became malignant understated the fact, is now generally recognized by operating surgeons of experience. I have seen two cases of cancer of the stomach within the past six months where it was next to certain that the malignant disease had been preceded by ulcer for many years. The experience of the Mayos makes it very plain that more than one-half (54 per cent.) of all gastric carcinomata operated upon at the Rochester clinic in 1905 (40 cases), were preceded by a well-marked history of ulcer and anatomic evidence of the fact was found after operation.

When it is recalled that the topography of ulcer and cancer is practically the same, each occurring at the

pylorus in 80 per cent. of all cases, the conclusion is almost an irresistible one that malignant transformation must be far more common than hitherto suspected. I remember seeing three specimens presented at one meeting of the Pathological Society, of Philadelphia, where malignant transformation of benign ulcers was demonstrable. We should keep constantly before us the unpleasant fact that one-third of all carcinomata in the human subject occur in the stomach. No other organ is subject to such constant irritation which we know to be the most potent factor in transforming simple into malignant ulceration.

Operations for cancer to avail aught must be done early and the earlier the better. Is it not wiser to choose the precancerous state, if, from the symptoms presented, it is to be feared?

The other dangers of chronic ulcers are enough to warrant either excision of the ulcer or pylorectomy, which removes the ulcer-bearing area; but, the fear of malignant disease becoming ingrafted upon a benign ulceration, in a region too prone to irritation and in a soil so markedly fertile to cancer, demands radical treatment. Pylorectomy can be followed by end-to-end approximation of stomach and duodenum, where a small portion of each has been removed, or, by closure of both with independent gastrojejunostomy. The latter is usually to be preferred on account of the disparity in size between the viscera after the necessary amount of tissue has been removed. It is unnecessary to remove more than one to one and a half inches of the duodenum, for ulcers are rarely lower down.

The mortality following pylorectomy for ulcer, has been, so far as I can learn, 1 death in 31 cases. This represents the work of five surgeons (Mayo, Robson, Park, Finney and Rodman) and included all cases reported to me. A greater number will perish from perforation, as many from hemorrhage, not to mention other dangers, as stricture, hour-glass stomach, etc., which are less direct in their effect. If the ulcer is situated on the anterior wall of the stomach, in the cardiac portion and can be easily located, is circumscribed, and reasonably free from adhesions, excision or partial gastrectomy should be done. I am conscious of the fact that in advocating this plan I am opposed by the majority of American surgeons. I also admit that the existence of other ulcers may militate against a successful result, but the tendency of such ulcers to perforation is so marked and the consequences so disastrous, that it seems to me, and has ever done so, the operation of choice. The Germans generally favor the practice, many of them doing so warmly. Jedlicka calls it the normal procedure and claims for it a mortality of 5.88 per cent. When the ulcer is excised the interior of the stomach can easily be examined for other ulcers, and if they are found can be treated directly by excision or indirectly by gastroenterostomy. Where adhesions are numerous and dense, and the stomach and upper duodenum can not be easily mobilized, particularly in subjects presumably incapable of withstanding a prolonged surgical procedure, pylorectomy and partial gastrectomy should give way to gastroenterostomy, the posterior operation always, when practicable, being given the preference. The end results after posterior gastroenterostomy without a loop, now practiced by nearly all surgeons, are much better than they were several years ago, but they are not as satisfactory as the end results of pylorectomy and partial gastrectomy. It is unreasonable to expect that drainage of a stomach can either prevent or remove pathologic changes in the gastric walls.

PYLOROPLASTY.

The old methods of doing pyloroplasty have been weighed, found wanting, and are generally discredited. The operation of Finney, which he calls "pyloroplasty," but which has generally been termed by the profession gastroduodenostomy, has greater claims for recognition. It makes the anastomosis between the stomach and duodenum at the natural site, gives a larger outlet for the gastric contents and is unlikely to be followed by peptic ulcer. It has, however, contraindications, viz.: where there is much cicatricial tissue, fresh ulceration near the pylorus, or, in cases of markedly impaired gastric motility.

Jejunostomy has been extensively advocated and practiced in Germany for the relief of gastric and duodenal ulcer, with and without such complications as perforation and hemorrhage. It had the weighty endorsement of that great surgeon, Mikulicz, who advocated it in an address before the American Surgical Association, in 1903.

It seems unlikely to me that it will displace gastroenterostomy in the treatment of non-perforating and non-hemorrhagic ulcers, as it is substituting one makeshift for another and entails an amount of subsequent care and attention which are objectionable. In the treatment of perforation and hemorrhage where the direct method of dealing with the lesion is sometimes impracticable it has advantages over gastroenterostomy: First, it can be done under local anesthesia if the condition of the patient forbids a general anesthetic; second, it places the stomach wholly and not relatively at rest as does gastroenterostomy; third, its mortality is negligible.

THE MEDICAL TREATMENT OF DUODENAL AND GASTRIC ULCER.*

ALEXANDER LAMBERT, M.D.
Visiting Physician to Bellevue Hospital.
NEW YORK CITY.

To write a short discussion on the medical treatment of duodenal and gastric ulcer would have been a relatively simple task a few years ago; to-day it is far different and by no means easily performed. The difficulty arises in some degree because we realize more clearly than formerly that the course and prognosis of acute ulcer differ greatly from those of chronic ulcer, and especially because surgery has in a few years made such advances in the treatment of gastric ulcer that we must consider when medical treatment will suffice or when it is necessary for a surgeon to consider jointly what method of treatment will give the quickest and most permanent relief to the patient.

The medical treatment of duodenal ulcer being practically the same as for gastric ulcer, what is said for one will apply also for the other.

The acute and chronic gastric ulcer can not always be clinically differentiated. Often what seems to be an acute ulcer is in reality an acute exacerbation of a chronic and long-standing ulceration. The medical treatment for the two conditions is practically the same, being modified, as medical treatment is for other conditions, to meet the varying indications presented by different individuals. There is no specific for gastric ulcer, and we must rely on the normal reparative processes of

* Read in the joint session of the Sections on Practice of Medicine and Surgery and Anatomy of the American Medical Association, at the Fifty-seventh Annual Session, June, 1906.

the body to effect a healing, realizing that these processes are going on in an environment unfavorable to rapid and complete healing, and often in a body far below its normal condition of health.

The conditions to be met with are hyperacidity and sometimes hypersecretion and stasis of food in the stomach; nausea, vomiting and pain arising from the morbid processes present in the gastric mucous membrane; the general conditions and symptoms of nervousness and anemia arising from the faulty nutrition of the body; and not infrequently the complications of hemorrhage, perforation and at times stenosis and distortion of the pylorus or other regions of the stomach.

TREATMENT.

Physical Rest.—The first essential treatment is rest, complete rest for body and for stomach. This means rest in bed and rectal feeding, followed by continued rest in bed and milk diet. The length of time necessary to remain in bed varies from a week or two in acute and mild cases to several weeks in the cases of acute exacerbations of chronic ulcer. This rest cure does not mean the absolute isolation necessary in some cases of neurasthenia, but the patients must stay in bed and give up all the daily cares and worries of household and business. They may be entertained by reading and games and short visits from family and friends and may receive letters and write or dictate short replies. They must, however, remain in bed until the pain and tenderness following the ingestion of a mild but varied diet shall have disappeared. This will not average more than six weeks.

Rectal Feeding.—As soon as the general bodily rest is assured we should begin the gastric rest by complete abstension from food into the stomach; only ice and small amounts of water should be permitted, and rectal feeding begun. Each morning there should be given a high lavage of the colon with about four quarts of warm normal saline solution. After a rest of an hour the regular nutrient enemata should be begun and given at four-hour intervals during the day. Three or at most four are sufficient for the twenty-four hours. Each enema should not exceed four ounces in amount, and may consist of eggs, milk, meat broths, or meat powders, or a combination of these; but all enemata should contain only thoroughly predigested food, being thus prepared by pancreatic extracts and bicarbonate of soda. Two hours' predigestion is none too long for the preparation of these enemata. Alcohol is not an essential part of a nutrient enema and should not be given except for some special therapeutic reason, although it is a prominent ingredient of most proprietary peptone foods. About half a teaspoonful of table salt should be added to each enema. Some preparation of opium should also be added if the enemata are not well borne, or if the rectum becomes irritable from frequent use, as the rectal feeding may thus be carried on longer than is possible without it.

After a couple of days the feeling of hunger from stomach starvation becomes blunted, but the feeling of thirst is troublesome, and besides the water by mouth, about 8 oz. of saline should be injected into the bowel about an hour after the last nutrient enema in the evening has been given. The daily colonic lavage will also supply some water, as some of it will be retained and absorbed, often half a pint or even more. The patient's sleep should not be disturbed, hence rectal feeding should be omitted during the night.

Even in mild cases rectal feeding should continue for three or four days, in more severe cases for a week or ten days, and in the exacerbations of chronic ulcer some authors recommend its continuance for twenty-one days. I believe we are more sure of a cure if even in the mildest cases we carry out for some period of time exclusive rectal feeding.

Gastric Feeding.—Gastric feeding should be begun before the rectum grows intolerant; and, as we gradually increase the gastric, we should decrease the rectal feeding. Peptonized milk in small doses, given at long intervals, should be the first food given by the stomach. By increasing the amount and diminishing the intervals the average patient at the end of a week from the time gastric feeding was begun will be getting a quart of peptonized milk in twenty-four hours, with the rectal feeding discontinued. The next step is to increase the amount of peptonized milk until two quarts or more a day are given. The use of an exclusive milk diet is often objected to on the ground of personal idiosyncrasy, or because of the bitter taste of properly peptonized milk. But, as was emphasized two years ago by my brother, Dr. S. W. Lambert, when writing on this subject, if we will use the rules of modified milk as practiced in infant feeding, varying as may be necessary the amount of top milk or cream, lime water and water, and using milk sugar instead of cane sugar, it is possible to obtain a milk, raw or peptonized, which will agree with any idiosyncrasy. There is, however, no epicurean or short road to the proper and palatable peptonization of milk; and the peptonized milk which we must use, whether in the colon or stomach, requires the constant application of moderate heat for two hours for its preparation, and the product has a disagreeably bitter and unappetizing taste. As soon as the patient is taking two quarts of peptonized milk a day we may begin to reduce the degree of peptonization; and usually during the third week the peptonizing process may be reduced to half an hour or twenty minutes' duration; and, by the end of another week, milk may be given raw, though perhaps still modified in strength.

As we reduce the peptonization we may add the cooked cereal gruels of barley, wheat, or oat flour as part of the diluent. During the fourth week, with the raw milk, we may add crust free bread, butter and eggs, but not hard boiled. It is well to add only one new thing at a meal that we may judge accurately if it agrees with the patient, and be ready to discontinue it if necessary. In the fifth week one may add potatoes (baked or boiled), rice (boiled), macaroni, custards, chicken and sweetbreads. In the final or sixth week of the cure, beef, mutton, green vegetables, light salad without vinegar, cooked fruits, and simple puddings may be added.

During the period in bed the patients should receive daily alcohol spongings and baths and light massage to the arms, legs, chest and back, avoiding the abdomen, to improve the general condition. Iron in some non-irritating form, as the pyrophosphate, should be given if necessary. The average patient will be out of bed in the fifth week; in the milder cases this will occur earlier. Each day from this on should see the patient doing a little more, so that before long he may resume his ordinary existence.

The Lenhartz Protein Diet.—Lenhartz recently has expressed his dissent from the abstinence diet and gives a protein diet from the first. Starting with two eggs and 6 oz. of milk on the first day, he increases the eggs one a day until eight are taken and continues at this number; the milk being simultaneously increased three ounces a day until a quart is taken and continued at this amount. The eggs and milk are given ice cold and in teaspoonful doses. On the third day two-thirds of an

ounce of sugar is given, and this is gradually increased until on the ninth day 1.6 oz. are given, and this amount is continued. On the sixth day an ounce of raw scraped beef is given, double this amount on the next day, and so continued. On the seventh day 3.3 oz. of milk cooked with rice are added and gradually increased to ten ounces on the eleventh day. On the eighth day two-thirds of an ounce of zwiebach is added and gradually increased until 3.3 oz. are given on the fourteenth day. On the tenth day 1.6 oz. of raw ham are given and continued daily in this amount. Butter is also added on the tenth day, giving two-thirds of an ounce, and double this amount on the next day and continued. Lenhartz reports 60 cases treated by this method with gratifying results.

Danger of Relapse.—Whatever the diet and method of cure we pursue, after we consider our patients cured we must always remember the danger of relapse or a recurrence of the ulcer; and we must impress on them the necessity for a prophylactic diet and mode of life which we must insist they observe for a long time. These patients must avoid frequent eating and drinking and at all times the overdistension of the stomach with food. They must eat slowly and masticate their food thoroughly. No irritating or hard foods, such as bread crusts, fruit seeds, tough vegetable or meat fibers must be given the chance to irritate mechanically the gastric mucous membrane. Alcohol in all its forms, spiced and highly cooked sauces and condiments and even excess of common salt must be avoided lest there be a chemical irritation in the stomach. As recommended by Shattuck, from three to six months after they seem well they should take before each meal from one-half to two teaspoonfuls of bismuth subnitrate. Physical and mental overfatigue must be avoided and no journeys should be undertaken on which they can not control their diet and mode of life.

Drug Measures.—Two therapeutic measures with drugs used in connection with the dietary régime deserve special mention. One is the bismuth cure, as described by Fleiner, the other the olive oil cure of Cohnheim.

1. Fleiner's Method: Wash out the fasting stomach each morning until the water returns clear and is free from all acid reaction; then introduce through the tube six ounces of water in which 2.5 to 5 drams of subnitrate of bismuth is evenly suspended. As soon as the tube is withdrawn the patient should lie down and rest quietly in such a position that the bismuth will gravitate toward the supposed site of the ulcer. After half an hour's rest the patient should be given his breakfast. The use of the bismuth should begin with the gastric feeding and continue for two weeks. Fleiner claims for this bismuth cure both an antiseptic and astringent action, besides a reduction of the hyperacidity and a mechanical protective effect of the large dose. The result of such treatment given daily should be immediately apparent in a diminution of the stomach distress and a cessation of the pain, nausea and vomiting.

Ewald has suggested the use of the insoluble carbonate of lime instead of the bismuth; and Pariser has obtained excellent results by the use of a mixture of chalk, talcum and magnesium in place of the bismuth.

2. Cohnheim's Method: Introduce olive oil through the tube into the fasting stomach after a moderate lavage, before breakfast, in quantities of from two to four ounces; or give it before the three principal meals, without the use of the tube, in doses of one to two ounces. Cohnheim claims that the oil forms a protective coating to the ulcer, relieves the pain and vomiting and tendency to pyloric spasm, allows the patient to be fed, itself acts as a food and, finally, that it checks the secretion of acid. From his reports it would seem that the milder cases can be treated under this oil regimen by simply adding a regulated diet without any rest cure.

Krausz has recently recommended a mixture of 75 grains of sodium bicarbonate in three ounces of olive oil to be given in tablespoon doses before each feeding.

Objections.—The objections urged against the bismuth and oil cure are the use of the tube in gastric ulcer. The bismuth and oil are best given by a tube, but they can and often have been given directly by the mouth. The question of the use of the stomach tube in gastric ulcer is one not always easily decided; but, if care is observed not to distend the stomach and too great pressure is prevented by limiting the height of the funnel to the head of the patient, the risk of perforation of the ulcer is slight.

But in those cases in which there has been recent hemorrhage, or if even slight hemorrhage follows the lavage, the tube should not be used. Two cases of fatal hemorrhage have been recorded, due, it was believed, solely to gastric lavage.

Other objections to the bismuth cure of constipation and discoloration of the stools, preventing the observation of malæna from slight hemorrhages, do not hold good. Large doses of bismuth do not seem to constipate, the guaiac test for blood in the feces is not obscured by bismuth and is so easily performed that it should be a routine procedure carried out at least every few days.

Silver Nitrate and Iron Perchlorid.—The principal drugs used for their astringent action and in the hope of stimulating the ulcerated surface to cicatrize are the perchlorid of iron and nitrate of silver; of these the silver is by far the most useful. To insure all the silver reaching the stomach in an active condition the solution must be given through a tube. But, if the use of the tube is undesirable, the nitrate of silver can be given in pill form in .25 to .5 grain doses, or, better still, the same dose in solution with 5 to 10 grains of bicarbonate of soda given on an empty stomach three or four times a day. The nitrate of silver acts both as an astringent and as an antacid; for, if it is precipitated as an insoluble chlorid, it uses up in the process some of the hydrochloric acid in the stomach. Boas recommends a solution of silver nitrate, four grains to four ounces of water, a tablespoonful to be taken on an empty stomach three times a day. After one bottle of this has been taken, five grains of silver nitrate to four ounces of water are given and two bottles of this strength used. Then seven grains to four ounces are given and two bottles of this taken. The nausea sometimes occurring from this medication may be corrected by peppermint, and the slight diarrhea seen at times in the beginning of the silver cure will cease spontaneously during its further administration.

The Alkalies.—Simple antacid and some laxative action is all that is usually ascribed to the alkalies, and often Carlsbad salts are given the first thing in the morning as routine treatment; but Myer, quoting Binet in a recent communication, attributes still further action to calcium phosphate, sodium bicarbonate and magnesium which, he claims, increase the gastric secretion through stimulation. This action continues up to the point of saturation of the hydrochloric acid in all three cases, but in different degrees, the action being slight after sodium bicarbonate and very marked after magnesium. Sodium bicarbonate also stimulates the motility of the stomach

through the liberation of carbon dioxid. It acts on the sensibility only when pain develops a long time after eating. And such pains do not always point to hyperacidity. Often when the pain is greatest the stomach contains no free hydrochloric acid or less than is found in a test meal which has caused no pain. These pains, therefore, are dispelled more promptly by sodium bicarbonate, which neutralizes but little acid, than by magnesium and calcium, which neutralize more acid. Binet believes that this pain which develops some time after the ingestion of food is due to pyloric spasms, which are relieved by sodium bicarbonate, because of its tendency to empty the stomach through the stimulation of the motor function.

Symptoms and Complications.—In the treatment of any given case of gastric ulcer there is often a predominance of some symptom or the occurrence of some complication which demands special treatment. The nausea and vomiting and nervous symptoms are often allayed by the treatment of the ulcer itself by diet, rest and the bismuth or oil as already described. If they recur during dietary treatment, often a change back to a simpler diet will suffice to allay them again. Antiemetics are certainly not contraindicated and are often of benefit. The pain may disappear without further medication during the gastric rest with rectal feeding, or it is often allayed by the silver nitrate and sodium bicarbonate; if not, codein, cocain or anesthesin may prove effective; the relief by orthoform in my experience has been of but very short duration. Morphin will relieve, but tends to increase the gastric acidity. Hyperacidity, whether it is a cause or an effect of ulcer, is usually present and often requires attention. Frequently the simple neutralization by sodium bicarbonate is sufficient. The use of bismuth, oil and fatty foods and irrigation by silver nitrate secure the same results. Atropin or belladonna has been used successfully to control or check the secretion of the acid.

The serious complications of ulcer are perforation and hemorrhage. Perforation is a surgical condition, and one can not emphasize too strongly the urgent necessity of an operation at the earliest possible moment after the perforation has occurred. Slight hemorrhages not infrequently occur in the course of treatment of ulcer, and demand no deviation from the lines of treatment already laid down. Hemorrhage is often the first indication that a patient has an ulcer and when the amount of blood lost can be measured by ounces immediate treatment with a period of initial gastric starvation should be instituted. If the hemorrhage, even though it has been severe, is not repeated, the regular routine treatment should go on. If a considerable hemorrhage is repeated, or if there are repeated small hemorrhages sufficient to reduce the vitality of the patient, medical and surgical treatment should be discussed immediately and the physician should not look on the surgeon as the last resort. The medical measures recommended for hemorrhage are absolute rest in bed, morphin if necessary to obtain physical and mental quietude, the swallowing of ice, cold application on the abdomen, subcutaneous injections of ergot, one or two teaspoonfuls of turpentine mixed with the white of an egg and thirty drops more after an hour if necessary, and solutions of adrenalin chlorid left in the stomach by a tube, clots in the stomach being first washed out and the stomach allowed to contract.

After a severe hemorrhage the question arises whether a saline infusion should be tried. If the heart can carry on the circulation without it, it should not be given; the blood will tend to coagulate and plug the bleeding point better without it, as the infusion may wash out the plug. If it seems necessary it may be given, but only enough to enable the circulation to go on and one should be satisfied with a relatively poor pulse. Subcutaneous injections of normal saline are better, and often sufficient fluid can be absorbed by injecting 8 to 10 oz. of saline into the colon and repeating this procedure a number of times at two-hour intervals. Vigorous cardiac stimulation is certainly contraindicated.

RESULTS.

This must suffice for the medical treatment. Let us now consider its results. Taking the statistics recently published by Dr. Geo. G. Sears,[1] of this city, and adding Leube's statistics, we have 1,203 cases of gastric ulcer in which the immediate results of treatment were 88.3 per cent. cured or improved. Considering the end-results after four or five years in 647 patients, of whom such statistics are available, there is a further history of 14.2 per cent. to 37 per cent. of relapses, some patients remaining well after the relapse, 5.2 per cent. were unimproved and 5.8 per cent. died. And, finally, we have 52 per cent. as cured, 40.8 per cent. as failures, 3.6 per cent. dead of ulcer and the rest dead of intercurrent diseases. These are not encouraging statistics, but there are undoubtedly among the failures many cases which to-day would without question be sent to the surgeon. There is no question to-day that, besides perforation, all cases of pyloric stenosis and distortion of the stomach from cicatrices or perigastric adhesions belong to surgery. If we could but know how many of the medical failures belonged to these surgical classes, we could form a more accurate judgment of the value of medical or surgical treatment in those that remained.

Leaving these statistics as they stand, physicians are to-day waiting for surgical statistics of end-results from gastric surgery. Surgical literature seems more concerned with its immediate results and the perfection of its technic than in reporting the value to the patient of the operation performed. Leaving out of medical consideration, as has just been said, all cases of mechanical obstruction and distortion, there remains to be considered acute and chronic ulcer and the question of surgical interference in hemorrhage. In young individuals, suffering in all probability from acute ulcers, medical treatment has obtained its best results; and could we separate these cases from the general mass of statistics, it is my belief we would find a high percentage of actual cures.

In reviewing the results of gastroenterostomy in these cases, Clairment[2] mentions a case of perforation and death and seven fatal hemorrhages following the operation and concludes that palliative gastroenterostomy for open ulcers gives poor lasting results and does not protect the patient from the dangers of perforation and hemorrhage. If the operation does not protect against these two dangers, it is certainly wise to wait until these dangers arise and to consider acute ulcers as belonging to medical treatment until life is threatened by the acute complication. These patients are in more danger from perforation than from hemorrhage; and, even after severe hemorrhage has occurred, medical treatment will save a greater number than surgical.

In what conditions of hemorrhage, then, can the physician turn to the surgeon with a fair promise of improving the chance for life of his patient? The impossibility of locating the ulcer and bleeding point be-

1. Boston Med. and Surg. Journal, vol. cliii, p 369.
2. Arch. f. Klin. Chir., vol. lxxvi, 1905.

fore operation, frequently even at operation, and the high mortality of operations performed for severe hemorrhages convince us that we are not just to our patients nor to the surgeon if we consider surgery as the last desperate chance. We will make few errors if we accept Leube's indications:

1. Repeated, little, unceasing hemorrhages, sapping the vitality of the patient, absolutely indicate early surgical interference, and all the more so if stasis is also present.

2. A simple profuse hemorrhage is not a surgical indication. But if it is repeated, an operation is relatively not absolutely indicated. An operation is only indicated if the pulse and general condition of the patient justify it.

In chronic ulcer, the condition in which most medical failures occur, does surgery offer a better chance of cure than medicine? In skilled hands the mortality of gastric surgery for ulcer to-day is about the same as in medical treatment without surgery. But, until the best operation and its technic is more generally agreed on, so that the skill of a few is more widely diffused and more statistics of end-results of operations are published, physicians can not enthusiastically adopt a surgical point of view. At present we are constrained to believe that all chronic ulcers should first be treated by a most careful and strict medical regimen; if that fails and the patients can not live in reasonable comfort or are debarred from the occupations necessary for their livelihood they should then undergo surgical procedures.

NOTE:—The discussion on the preceding papers in the Symposium on Causes, Diagnosis and Medical and Surgical Treatment of Gastric and Duodenal Ulcer will be published next week with the article of Dr. W. J. Mayo on surgical treatment.

CEREBRAL DECOMPRESSION.

PALLIATIVE OPERATIONS IN THE TREATMENT OF TUMORS OF THE BRAIN.

WILLIAM G. SPILLER, M.D.
AND
CHARLES H. FRAZIER, M.D.
PHILADELPHIA.

(*Continued from page 751*).

CASE 4.—Tumor of the cerebellum or cerebellopontile angle. The tumor was not found, but great benefit was obtained by a craniotomy associated with excision of a portion of one lateral lobe.

History.—C. E., aged 23, was admitted to the University Hospital, Dec. 7, 1903, and was placed under the care of Dr. Charles K. Mills who reported that his illness began several months prior to his admission to the hospital, the principal symptoms being dizziness and intense headache, starting in the occipital region and radiating toward the forehead. Five weeks later his sight began to fail and a week later some weakness of the left arm and leg were noticed.

At the time of his admission to the hospital he was suffering from the most distressing headache, which was almost constant, and from vertigo and ataxia to such an extent that it was almost impossible for him to walk alone or without support. Nor could he even stand alone unless leaning against some stationary object. His vision was so affected that he could not see gross objects and the examination of his eyegrounds revealed the presence of very marked choked discs and optic neuritis.[35]

Operation.—The patient suffered so that it did not seem justifiable to postpone operation for further and more elaborate study of the case. Accordingly within a week of his admission to the hospital a left cerebellar craniectomy was performed by Dr. Frazier. The dura was noted to be unusually tense, and on reflecting the dural flap a considerable portion of the cerebellar hemisphere protruded through the opening. It was found to be almost impossible on account of the protrusion of cerebellar tissue to make further exploration, so the operator proceeded to remove from one-third to one-half of the lateral lobe. After this was accomplished exploration was continued, but to no avail. No tumor could be seen or felt in any portion of the left cerebellar fossa.

Subsequent History.—The postoperative record of this patient is one of unusual interest because of the remarkably rapid improvement which followed. Within one week of the operation the patient's headache had entirely disappeared, his vision was restored so that he could see minute objects on the ceiling as he lay in bed and his vertigo and ataxia had almost entirely disappeared. At no time during the convalescing period was the patient's condition such as to give any concern. He was kept under observation in the hospital for a period of two months, and inasmuch as there was not the slightest return of symptoms he was allowed to go home with the understanding that he would return to the hospital if any of his cerebellar symptoms recurred.

Present Condition.—He returned to the hospital for an examination March 5, 1906. About two years and four months had elapsed since the operation and his headache, nausea and vomiting have never recurred. His vision is practically normal and he is now engaged as a laborer in the Pennsylvania railroad shops at Altoona. It should be said, however, that he occasionally has some attacks of vertigo. His weight has increased to 184 pounds and he is in all other respects apparently perfectly well (Fig 3).

CASE 5.—Tumor of the cerebrum; decompression operation affording relief from headache for a period of three years.

History.—W. D., age 22, was admitted to the University Hospital, Nov. 5, 1903, having previously been under the care of Dr. W. O. Hermance. He was admitted to the service of Dr. William G. Spiller, by whom the following history was elicited: He has been suffering from headaches since 1897 and for the past nine months they have been especially severe. He has furthermore often complained of nausea, vomiting and dizziness and his sight is completely lost.

Examination.—On examination there was found to be no involvement of either the fifth or seventh nerves. The movements of the tongue and of all the limbs were unimpaired. The biceps tendon and the triceps tendon reflexes were not specially active. The grasp of each hand was normal, as was the resistance to passive movements in all the extremities. There was no involvement of the bladder or rectum and no ataxia of upper or lower limbs. There was no deviation from normal as to stereognostic conception in either hand, the gait was normal, there was no tendency to sway or fall, there was no Babinski reflex on either side and the patellar reflexes were exaggerated. There was persistent ankle clonus on the right but none on the left side. There was no word deafness and no aphasia. His sister reported that about three months previously he was unable to speak at all for at least an hour, but that this was the only time he ever entirely lost the power of speech. He was at times delusional, and imagined he was being put into a hole. He had what he calls "sinking spells" in which he felt weak and his heart stopped beating.

About six months prior to his admission to the hospital he complained of stiffness (?), probably weakness, in the back, left side of the neck, in the left arm and left leg. He had never had any convulsions, but from April to August of the present year his whole body would get stiff for about half an hour. His memory is better than it used to be. He listens attentively to what is read to him and remembers it better than the persons who read it. The headache had been frontal and bilateral until February of this year and it seemed to have become more localized to the left temporal region.

Dr. Thorington, who had examined his eyes, reported that there were no ocular palsies, but choked disc in both eyes.

35. This is Case 4, Dr. Mill's paper, "The Diagnosis of Tumors of the Cerebellum and Cerebellopontile Angle, with Special Reference to Their Surgical Removal," New York and Phila. Med. Jour., Feb. 11 and 18, 1905.

slightly more advanced in the left. There had been numerous hemorrhages, large and small, old and recent. Examination of the urine on one occasion prior to his admission to the hospital revealed a few hyalin casts and a small quantity of albumin. Since the examinations at the hospital, after repeated examinations, only on one occasion was a suspicion of hyalin casts: at no time was there albuminuria.

Nov. 5, 1903, Dr. Shumway made the following ophthalmic report: No light perception. Right eye, atrophy following choked disc. Nerve head much swollen, veins tortuous, no hemorrhages. Left eye, nerve head still more swollen, some atrophy, hemorrhage on the nasal side of the nerve, numerous white points of exudation.

Nov. 6, 1903: It was noted on this date by Dr. Spiller that pupils were dilated; there was no reaction to light and no ocular palsies. The ophthalmic reflex was present on each side. Patient closed the eyelids firmly and wrinkled the forehead well on both sides, the tongue was protruded straight, not wasted and there were no fibrillary tremors. His hearing was apparently not affected. He swallowed without difficulty. There was some tenderness to percussion over the left temporal region. There was no word deafness nor motor aphasia.

Upper limbs: Movements of the upper limbs were free at all points. The biceps and triceps reflexes hardly obtainable on either side. Grasp of each hand and resistance to passive movements were normal. Sensation for touch and pain normal in all parts of the body, and the sense of position and stereognostic conception was unimpaired. There was no wasting.

Lower limbs: Voluntary power normal, no hemiasynergy on either side and no wasting of the lower limbs. The sense of position was normal on both feet. The patellar reflexes were distinctly exaggerated on either side and more prompt on the left side. There was a slight indication of ankle clonus on the right side, although clonus was not as persistent as at the last examination. There was no clonus on the left side. The Achilles tendon reflex was exaggerated on each side, but more so on the left. The patient stood well with his feet together and the eyes open or shut. His gait was normal, although it was uncertain on account of his blindness. There was no Babinski on either side.

Further examination of the other organs including those of the thorax and abdomen proved negative.

Operation.—Craniectomy was performed by Dr. Frazier under ether anesthesia and an osteoplastic flap was reflected in the left frontal region. It was noted at the time that the skull and the dura were abnormally thick. There were no adhesions between the dura and the skull. Pulsation was visible and the brain did not bulge when the dura was reflected. Especially at the superior and anterior aspect of the opening the consistency of the brain seemed abnormally soft and an exploratory needle was introduced in various directions, but with negative results. The dural flap was replaced with sutures and the bony portion of the osteoplastic flap was removed for the purpose of relieving intracranial pressure.

Subsequent History.—The patient remained under observation in the hospital until Jan. 27, 1904, at which time it was noted that he had had no headaches since Dec. 28, 1903. His general condition had improved and he had gained in weight and strength. The last ophthalmic examination prior to his discharge from the hospital, made Jan. 1, 1904, notes that the nerve is becoming more and more atrophied.

April 15, 1904: The patient was admitted to the hospital again with a history of having had no recurrence of headache after he had been discharged; from this time on the headaches recurred generally on the right side of the head in the occipital region, accordingly it was deemed advisable to perform a second palliative operation and on April 16, 1904, Dr. Frazier performed an osteoplastic operation, reflecting a flap from the right temporo-parietal region, removing a flap 10 cm. broad and 7 cm. wide. It was noted at the time that there was no visible pulsation and that the brain appeared to be under considerable tension. The bone at the margin of the upper aspect of the opening appeared abnormally dark in color and unusually porous. An exploratory needle was introduced into the pons at about the middle of the opening but no fluid was detected.

Following the operation the patient complained for a few days of a severe supraorbital neuralgia which was attributed to the pressure which had been effected by the use of a pneumatic tube applied for the purpose of controlling hemorrhage. The patient was discharged from the hospital April 28, about two weeks after the operation. His headaches had not entirely disappeared, although they were comparatively mild in character and the patient no longer required hypodermic administration of morphia to which he had been accustomed heretofore.

Present Condition.—May, 1906: The last observation was made 2 years and 6 months after the first operation and 2 years and 1 month after the second operation, and at this time it was reported that the patient had enjoyed almost absolute relief from his headaches. He is able to perform the duties connected with the management of a cigar store and with the exception of his loss of eyesight he appears to be entirely well. The optic neuritis was so far advanced when the patient was first seen that the possibility of saving his sight was out of the question.

CASE 6.—Tumor of the cerebrum.

Patient.—M. B., aged 17, was referred to the University Hospital by Dr. R. Ross Jordan, Tyler, Clearfield County, Pa., and transferred from the service of Dr. Charles K. Mills, October 9, 1904.

History.—He was struck on the back of the head 9 months ago. He was not unconscious at the time he fell. About an hour later he became dazed, walking around aimlessly and remaining in this state for about half an hour. On Jan. 28, 1904, he was seized with shortness of breath, succeeded by tingling in the ears, and fell to the ground. It was said that during the convulsion his eyes were turned from side to side, and that the whole body with the exception of the hands and wrists fell into a state of spasm, lasting from five to seven minutes, with frothing from the mouth. Since that time he has had five attacks of this character, the latter one having been preceded by violent occipital headache and vomiting.

Examination.—He has marked optic neuritis, complains of intense headache and occasionally vomits. There is no hemiasynergia on either side. No paralysis of either facial nerve, the masseter and temporal muscles contracting well on either side. Sensation for pain and touch is equal on both sides, so that there is no involvement of either the sensory or motor root of the fifth nerve. The extraocular movements are normal, but there is a lateral nystagmus when looking from either the right or left. The tongue is protruded straight, moves freely and there are no tremors. The head is not tender to percussion.

Upper Extremities: Grasp of each hand is equal and strong; sensation for pain and touch normal in each upper limb and it is the same on both sides. Stereognostic perception is normal in both hands. Biceps and triceps tendon jerk are not distinct in either side. There is no muscular atrophy. Resistance to passive movements is normal in both upper extremities. In the lower limbs no hemiasynergia. Resistance to passive movements normal, patellar reflex normal on each side, and there is no Babinski reflex. Sensation for touch and pain are the same on both sides, gait and station are normal wih the eyes open or shut. There is not the slightest trace of hemiparesis or disturbance of sensation on the left side.

Ophthalmologic Report.—From the service of Dr. de Schweinitz: Ophthalmic diagnosis hemianopsia. Pupils react normally to light and accommodation, the muscle balance normal; eyegrounds, media clear; O. D. marked optic neuritis, 5 D. no change in macula, O. S. swelling of disc 5 D, a few small fresh hemorrhages in the fundi. No change in the macula.

Operation.—Dr. Frazier, Oct. 10, 1904. Inasmuch as the symptoms pointed entirely to a lesion in the occipital lobe, an osteoplastic flap was reflected, exposing this region. The dura exposed in the opening presented a mottled appearance as though the seat of an organized traumatic or inflammatory exudate. There was slight visible pulsation and there seemed to be considerable tension. When the dural flap was reflected the brain immediately bulged through the opening even beyond the level of the scalp. And from the opening of a jet of yellowish-red fluid spurted three or four inches. About 45 c.c. of fluid were evacuated in this way. In order to clos-

the defect it was necessary to reflect a flap from the pericranium inasmuch as the brain still bulged considerably through the opening. This was taken from the section of bone contained in the flap and the bone itself was removed. The wound was closed with interrupted silkworm gut sutures and drain introduced through counter openings.

Subsequent History.—October 13: Since the operation the headache has entirely disappeared and the patient is now able to see objects which he could not before the operation.

October 24: On the date of his discharge from the hospital it was reported that the patient felt better than he had for some months and that the vision of both right and left eyes had improved.

R. E. V. before the operation 6/30, at the present time 6/22.
L. E. V. before the operation 6/30, at the present time 6/15.

There is still a left hemianopsia and the swelling of the discs has decreased from 5 to 3 D.

Dec. 21, 1904: The patient was readmitted to the hospital. He returned to the hospital chiefly owing to the fact that the hernia cerebri had increased and especially for the past two weeks his vision had been failing. During the past two months he had gained forty pounds. Examination of the eye-ground showed that the choked disc had entirely subsided, but that there was marked optic atrophy. There was left lateral hemianopsia for light only.

Dec. 23, 1904: The original field of operation was exposed and the dura was found intact. On reflecting the latter a canula was introduced and immediately a large quantity of blood-stained fluid escaped. Immediately after the evacuation of the fluid the hernial protrusion collapsed. The question arose at the time of the operation as to whether we were dealing with a cyst of the occipital lobe or the dilator horn of the lateral ventricle. No evidence could be detected of a neoplasm in the neighborhood of the operative field. The wound was closed in the usual way.

December 29: Patient has made a satisfactory convalescence from the operation. There has been a free discharge of cerebrospinal fluid from the wound, requiring reinforcement of the dressing from time to time.

Jan. 27, 1905: The patient was discharged from the hospital to-day, the wounds having healed *per primam* throughout. The hernia was not so prominent as it was before the operation. The patient's condition, with the exception of his impairment of vision, is entirely satisfactory. The optic atrophy which was discovered after the choked disc had subsided of course precludes the possibility of his recovering his vision. In a letter received from him February, 1906, the patient reports that he is feeling very well, has had no bad spells, and is now in attendance at a school in Pittsburg, Pa.

CASE 7.—Tumor of the left lateral lobe of the cerebellum. Decompressive operation, followed by striking improvement.

History.—Inasmuch as this case was reported in full,[36] it will be necessary to refer here only to the salient points.

Patient.—F. M., aged 10, was referred to Dr. Frazier's service at the University Hospital by Dr. D. J. McCarthy, March 7, 1904. The essential symptoms in the case were a gradual increase in ataxia and pronounced headache, vertigo and vomiting. There was a marked degree of choked disc on both sides.

Operation.—March 13, 1904: Dr. Frazier removed the bone overlying the left lobe of the cerebellum and proceeded to explore the hemisphere for a tumor. Exploration failed to reveal the presence of a tumor and before closing the dura, one-third of the cerebellar hemisphere was removed. The effects of the operation were most gratifying. At his discharge from the hospital on March 27 his condition was noted as greatly improved. His whole disposition had changed; he was bright and cheerful and complained neither of headache nor vomiting.

Second Operation.—November, 1904, the patient returned to the hospital because of the recurrence of some of his symptoms. On the following day the cerebellar fossa on the affected side was explored and an infiltrating tumor about the size of a walnut was found and removed.

The value of the palliative operation in those cases in which the tumor can not be localized is well illustrated by this case. Between the date of the palliative operation and the time at which the tumor was finally found and removed the patient had been comparatively free from any subjective disturbance.

CASE 8.—Suspected tumor of the cerebellum. Decompressive operation including removal of a portion of one cerebellar hemisphere, followed by considerable relief as to the vision, headache, vomiting and vertigo. Death of the patient 7 months later. No autopsy.

Patient.—P. K., aged 15, entered the neurological wards of the University Hospital in the service of Dr. William G. Spiller, May 9, 1905.

History.—Eight months ago the patient complained of headache all over the head associated with vomiting. The attacks of vomiting were irregular, sometimes twice a day and again not oftener than twice a week; in the interval, however, he was occasionally nauseated. He complained for some time also of dizziness and difficulty in locomotion. He had never had any convulsions.

Examination.—By Dr. Spiller, May 12, 1905. Conjunctival reflex is distinctly impaired on the left side; corneal reflex normal, both cornea and conjunctiva are normal on right side. Movements of the face are normal on both sides and there is no involvement of motor or sensory root of the fifth nerve. Sensation for touch and pain is not impaired. Movements of the eyeballs in all directions are somewhat impaired, and somewhat inco-ordinate. Tongue is protruded straight; there is no atrophy and there are no fibrillary tremors. Hearing for the voice appears to be normal in each ear; speech and intelligence normal. When sitting up the patient holds his head fairly erect, possibly with a little tendency to incline it to the left.

Fig. 3.—Showing the general robust appearance of patient one and one-half years after decompressive operation for tumor of the cerebellum (Case 4).

The grasp of each hand is normal, finger-to-nose test normal on each side. Neither biceps tendon reflex, triceps tendon reflex nor the wrist reflexes are distinct on either side. Sensation for both touch and pain normal in both upper extremities. There is no wasting in the upper extremities.

In the lower extremities the voluntary movements are normal, and there is good resistance to massive movements. The patellar reflex is very prompt, even exaggerated on the right side, but not quite so prompt on the left side. There is no ankle clonus. The Achilles jerk on the right side is prompt, but not so prompt on the left side. There is no Babinski reflex on either side, the smaller toes being drawn downward, the great toes remaining stiffer. Sensation for touch and pain is normal in each lower extremity, the cremasteric reflex is exceedingly prompt on the right side and prompt, but not so markedly so on the left. The musculature of the lower limbs is poorly developed, the patient has some difficulty in standing. On standing with his feet close together, even with his eyes open, he usually falls to the left and backwards. His gait is very ataxic with a marked tendency to go backward, and to the left. Hemiasynergy is not present on either side.

Provisional diagnosis, cerebellar tumor, more likely on the left side because of the tendency to hold the head to the left, to fall to the left and backward and because of the impairment of the left conjunctival reflex, and of the less degree of exaggeration of tendon reflexes on the left side.

May 12, 1905: Ophthalmic report by Dr. Shumway. Completely blind in the right eye, left vision about 1/100. Both pupils are widely dilated. The right pupil does not re-

36. See Dr. Mills' paper, "The Diagnosis of Tumors of the Cerebellum and Cerebellopontile Angle, especially with Reference to Their Surgical Removal," pp. 91-96, New York and Phila. Med. Jour., February 11 and 18, 1905.

spond to light and the left responds sluggishly. There is some limitation of the movements of the eyes, particularly of inward movement, the left eye not approaching within 5 mm. of the inner angle; the movements are very jerky in character. There is a high-grade optic neuritis of the right eye which is going into secondary atrophy of the nerve. The veins are very tortuous and there is a small hemorrhage on the outer side of the nerve and an elevation of 6 D. In the left eye there is also an optic neuritis and of a milder degree with an elevation of about 4 D. The left nerve is also becoming atrophic. The patient was referred to the surgical wards.

Operation.—May 17, 1905. Under ether anesthesia Dr. Frazier performed a decompressive operation. The exposure of the left cerebellar hemisphere was attended with unusually free hemorrhage particularly from those sinuses which have been described on previous occasions as existing in the occipital bone in the neighborhood of the occipital protuberance. When the dura was opened the cerebellar tissue bulged considerably but on the surface of the hemisphere and to a depth of about one inch, no pathologic condition could be demonstrated. About one-third of the hemisphere was removed and the cerebellopontile angle exposed but with negative results. A very good exposure of the seventh and eighth nerves was obtained, which were demonstrated to the eight or nine physicians who were witnessing the operation. No further exploration was made and the wound was closed.

Subsequent History.—May 6, 1905. The patient reacted from the effects of the operation. Dr. Shumway reports that the optic neuritis had subsided very much, the apex of the swelling in the right eye is now only 3 D. as compared with the 6 D. before the operation, and the left eye 2 D. as compared with 4 D. before the operation. The nerves are becoming somewhat atrophied. The patient's vision has improved particularly in the left eye, so that he can count figures at a distance of two feet.

July 19, 1905: Reported to-day that the patient can walk around the ward without any assistance, although still somewhat unsteady, but, however, no tendency to fall in any particular direction. He now has no headache, and his vision has been so improved that he is able to distinguish faces and objects.

No opportunity was afforded to make any observations after the patient was discharged from the hospital, and in answer to a letter of inquiry written in January, 1906, we learned that the patient had died December 24, 1905.

CASE 9.—Suspected tumor of the cerebellum in which a decompressive operation entirely relieved the subjective symptoms.

History.—S. L., aged 20, patient of Dr. T. H. Weisenburg and Dr. M. Radcliffe was admitted to the University Hospital, Oct. 25, 1905, with the following history.

Family History.—Father died of pneumonia. Mother is living and well. Two sisters and six brothers all in good health. No history of nervous disorders, tuberculosis, renal disease, cardiac disease or neoplasm.

Social History.—Patient was born in Austria and came to this country when 3 years of age. Engineer by occupation. Uses alcohol and tobacco in moderation. Patient has a small urethral discharge at the present time of one month's duration. There is no syphilis.

Previous Medical History.—Patient had measles during infancy; otherwise he has always been in excellent health. He was well until one year ago, when he began to experience nausea, followed by vomiting with pain of a severe character, starting in the nape of the neck and shooting upward to the top of the head. At first these attacks were rather frequent, occurring every day or every other day, but they have greatly decreased in frequency. Two months ago the sight in the left eye began to fail and now he can distinguish only shadow and light. At about the same time he noticed that he was deaf in the left ear. On attempting to walk he feels giddy and staggers. This began about three or four months ago and has not increased much since then. Turning the head from side to side and backward causes some pain, but not severe. Lifting causes severe pain with blurring of vision. No motor paralysis.

Examination.—By Dr. Weisenburg. Station with eyes open and shut good. Gait with eyes closed good, though occasionally he has tendency to walk either to right or left.

Eyes: Pupils dilated with atropin. Convergence impossible with left eye, i. e., on attempting to look at nose, the left internal rectus is weakened. Associated ocular movements to right and left are perhaps affected; i. e., he can look either to right or left to the normal extent, but in a short time the eyeballs have a tendency to jerk back toward the median line. Upward and downward associated movements are normal. No diplopia. Ophthalmoscopic examination shows marked choked disc on both sides, especially the left. Both optic nerves are much swollen and hemorrhages are profuse. The appearance is that of an albuminuric retinitis.

The fifth, the seventh and the twelfth nerves are normal. Hearing seems to be diminished on the left side. There is no trouble in eating; no dysphagia; no dysphonia. Memory is good. Both upper and lower limbs are normal in form. Reflexes and sensation are normal. There is no ataxia on either side. No involvement of bladder or rectum. No hemiasynergy. Touching conjunctiva on either side does not elicit any movement of eyeball while corneal reflex is present. There is no Babinski. The results of the examination of the nose, throat and larynx by Dr. Grayson and of the sense of hearing by Dr. Randall were entirely negative.

Operation.—On Oct. 26, 1905, a decompressive operation was performed by Dr. Frazier which consisted in a suboccipital craniectomy, the bone overlying the left cerebellar hemisphere was removed. There appeared to be an increased amount of intracranial tension and the dura did not present its normal pale bluish color, but in most places and particularly in the upper and inner angle it was a yellowish opaque and dotted here and there with whitish-yellowish specks. The dura was not incised.

The operative recovery was entirely uncomplicated. The wound healed throughout *per primam.*

October 31: Dr. de Schweinitz made an ophthalmic examination and reported a right choked disc plus 10 to 11 D.; left choked disc plus 9 D. and no fresh hemorrhages.

November 3: Dr. de Schweinitz reports O. D. choked disc plus 11 D., some fresh hemorrhages. Vision 6/22. O. S. choked disc plus 9 to 10 D., but more contracted laterally; fresh hemorrhage.

Dec. 23, 1905: The patient was discharged from the hospital to-day. Since the operation his vision has improved considerably.

December 22: Dr. de Schweinitz reported as follows: O. D. 6/12, subsiding neuritis plus 7 D. O. S., subsiding neuritis, plus 7 D. It will thus be seen that the choked discs have subsided about 4 diopters since the operation.

Jan. 29, 1906: Patient reported at the hospital for examination and said that there had been no headache, nausea or vomiting. O. D. the disc can be distinctly seen, slight swelling of the edges, only about plus 1 D. O. S. disc apparently normal. This is one of the most striking effects on choked disc after decompressive operations that we have observed and is particularly interesting in that the results were obtained without opening the dura.

May 29, 1906: The patient now has some headache, but much less than he had before the operation. He is occasionally dizzy. The patellar reflexes are a little increased. Gait and station are good even with eyes closed. Dr. de Schweinitz reports: Subsiding optic neuritis.

R. E., marked loss of capillarity, especially temporal half, disc swollen 5 D. (eyeground 3 D), hence actual elevation 2 D; vessels shrinking, some exudate in macula. L. E., well-marked subsiding neuritis and postpapillitic atrophy.

CASE 10.—Tumor of motor region.

History.—P. S., aged 25, was referred to Dr. Spiller by Dr. de Schweinitz.

Family History.—Father and mother living and well. No history of neoplasm, tuberculosis, liver or kidney disease. Cousin became insane and committed suicide. Mother says the whole family is very nervous.

Social History.—Went to school until 18 years, then studied law for three years, but was forced to give it up on account of his nervous condition, then became a fireman on a locomotive. Smokes to excess; drinks alcohol in moderation.

Note from Dr. de Schweinitz: "Double optic neuritis (choked disc) visual fields normal. No palsy of exterior muscles. Choked disc about 5 diopters."

Up to 8 years of age had almost every infectious disease. When 11 years old he went to bed well one night and awoke blind and remained so for four months (treated at St. Agnes Hospital). Sight gradually returned. According to his mother, "eyeballs were solid red, like clotted blood." To 17 years of age he had fair sight and did not wear glasses. At 17 he began to be very nervous, and it was then that he began to take "weak spells," About once a month he would suddenly become weak, his knees would give way and he would fall to the ground, but would not lose consciousness. These fainting spells disappeared after a while and have not been present since he was 18 years of age.

At 21 years of age he again wore glasses. His sight gradually diminished and he suffered severe pain in his eyes, especially behind the eyes. Temporary attacks of blindness lasting a minute or a few seconds occurred sometimes. He has always been a heavy smoker since he was 7 or 8 years old. He has averaged twenty to twenty-five cigarettes daily and also a pipe and a cigar a day. He had gonorrhea three years ago, but has not had a chancre or other venereal sore. He has been always subject to headaches, but within the past year pain has been almost constant, worse at night, preventing sleep, and associated with attacks of vertigo, weakness, nausea and vomiting. The headache is chiefly in the vertex, but sometimes occipital and above the eyes. He had a severe fall and struck on the back of his head when a child. Weakness disappears at will; if he "were to give in to it he would go in a heap." He has never had convulsions, but says that several times he has had attacks in which the whole left side, arm and leg, especially the leg, became numb, "as though dead"; the arm was only a little affected. He has no paralysis or paresis anywhere. He was a fireman on a locomotive three years and was so nervous that he gave up the work. Every little noise would make him jump, and he was always expecting something to happen, "lost his nerve," as he expressed it. Masturbated freely before 16 years of age.

Examination.—Sensation seems normal everywhere and to every form of stimulation, and there is no astereognosis and no loss of muscle sense. Ocular movements are good. Slight nystagmoid movement is seen on extreme lateral excursion, especially to the left. Reflexes are normal. There is no Babinski and no ankle clonus.

Cardiac condition: Irregular heart action without marked accentuation of either aortic or pulmonic sounds.

Patient states that the attacks of stiffness of left lower limb previously mentioned are usually preceded by much greater headache, a "sensation of something inside expanding and bursting out." They frequently occur at night, and in them the left leg becomes very rigid and is drawn across the right, but it can be voluntarily moved. The left arm is to a less extent involved and still less the left face. During the attack consciousness persists, but the whole left side feels as though "dead." He has almost constantly a blowing tinnitus aurium; only on the right side. He quit railroading in November, 1905, and since then has had only one or two attacks of spasm; previously had one or two weekly.

March 20, 1906: Yesterday morning in getting out of bed he had headache. Between 10 and 12 o'clock he became weak in his knees, but did not fall. In the afternoon he vomited and complained of intense headache and became unconscious. The left arm was flexed on the forearm and was stiff. The left lower limb was stiff and probably the left side of the face was affected. He was unconscious all night and very noisy and hard to restrain. This morning he is perfectly conscious, but in an agony of headache, crying out at times and tossing himself about in bed, clutching at any one near him and begging for relief. There is no motor weakness in any of the limbs, but he has some slight disturbance of sensation in the right hand. Stereognostic perception, the sense of position and tactile sensation are normal in each hand. The spasms which he has had have been in the left side and have always been tonic (never clonic). The patellar reflex is exaggerated on the left side and possibly slightly so on the right. Achilles tendon reflex is not exaggerated and there is no Babinski reflex.

Operation.—By Dr. Frazier, March 20, 1906. Under ether anesthesia the usual motor opening was made, the flap measuring 3½x4 inches in width and length. When the osteoplastic flap was reflected it was noticed that at a point about 2½ inches from the front of the posterior margin of the opening and just below the superior opening the dura had already been punctured by the neoplasm, and immediately overlying this point the bone had been almost entirely worn away by the tumor. There was no visible nor palpable pulsation. The exposed dura was of a greenish hue and gave the appearance as though there were beneath it numerous large vascular channels. There was a peculiar soft fluctuating sensation communicated to the examining hand. An exploratory incision was made in the dura, beginning at the point where it had ruptured spontaneously. A tumor was immediately exposed, apparently of the infiltrating character and filled with large vessels. Its removal was considered impracticable. The dural incision was closed and the lower half of the bone contained in the flap as well as considerable portion of the temporal bone was removed. The wound was closed as usual with interrupted silkworm gut sutures and the drainage introduced through two counter openings.

March 21: The headache, of which he complained so bitterly before the operation, has entirely disappeared. Patient can move his left leg, but has no movement in his left arm, forearm or fingers. Sensation is not impaired. There is some impairment of the left facial nerve.

March 22: The movements of the left lower limb are still unimpaired. The left upper limb is completely paralyzed, as is also the lower part of the left side of the face, the muscles supplied by the superior branch of the facial nerve being weak. The tongue deviates a little to the left when protruded. The left biceps and triceps reflexes are not distinct; the left patellar reflex is exaggerated. There is no ankle clonus on the left side.

Subsequent History.—March 23: Drainage removed to-day and wound in excellent condition.

March 25: Dr. de Schweinitz reports that in the right eye there is optic neuritis, a greenish-white swelling confined to the disc and covered with numerous particles, probably cholesterin. There are no hemorrhages. Swelling of the disc is plus 3 D. In the left eye the conditions are precisely similar swelling of disc plus 4 D. Vision O. D. 4/25, O. S. 4/12.

March 26: Patient's general condition is excellent. The dressing has been removed and he is up and about the ward.

March 27: For the first time the patient can lift the left arm and raise his hand over his head without any difficulty: he can flex his fingers.

March 30: Patient still has some weakness in the lower side of the face; the left upper arm is still weak, although power is gradually returning. Tactile sensation, sense of position stereognostic conception are normal in the left hand. He is able to walk unaided.

April 1: Dr. de Schweinitz reports, under date of to-day, optic neuritis in right eye plus 3 D., in left eye plus 4 D. R. E. V. equals 4/20 (?), O. D. equals 4/10 (?). Vision is very much blurred. Evidence of temporary blindness.

April 4: The patient was discharged from the hospital to-day, having had absolutely no recurrence of headache.

(To be continued.)

A New Clinical Method of Determining Blood in the Urine.—Klimoff announces a new technic in *Russkn Vrach.*, No. 16, 1906. The urine to be examined is mixed with any quantity of hydrogen dioxid and then is added a small amount of aloin powder. On shaking the mixture it turns purple. Slightly heating hastens the reaction. If the urine contains pus or is alkaline, the reaction will always be positive, whether there is blood in the urine or not, therefore the urine should be previously made acid by adding some acetic acid. The presence of albumin does not interfere with the reaction, but that of bile pigments does. With these limitations the test is reliable and sensitive.

New Appliances

TREATMENT OF FRACTURE OF THE INFERIOR MAXILLA, WITH DESCRIPTION OF A SPLINT.*

GEORGE MORRIS DORRANCE, M.D.
Assistant Demonstrator of Surgery at the University of Pennsylvania; Surgeon to the Out Patient Department of St. St. Agnes Hospital.
AND
NORMAN L. JAMESON, D.D.S.
PHILADELPHIA.

Fractures of the lower jaw are divided into fractures of the body, the ramus, the angle and the condyloid and coronoid processes. The most frequent variety is fracture of the body at the mental foramen; frequently the fracture is double, being two of the same variety or a combination of two different varieties. Numerous mechanical devices and operative procedures have been advanced for the treatment of these fractures, but, if one may judge from the numerous articles which appear each year, none give entire satisfaction. No one apparatus or operation will be satisfactory for all varieties of fracture of the inferior maxilla. The treatment of these fractures with the use of a chin cup and a Barton's bandage is antiquated and entirely unreliable, as well as being very uncomfortable. To be systematic, we will take up the different varieties in turn.

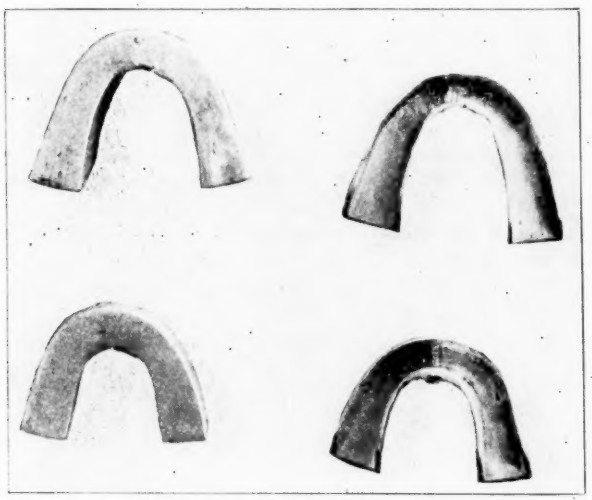

Fig. 1.—The mouth-pieces in two sizes.

FRACTURE OF THE BODY WITHIN THE ALIGNMENT OF THE TEETH.

Fractures of this variety may be treated with an interdental splint and good results obtained. The disadvantages of this method are: 1, It requires the assistance of a dentist; 2, the mouth can not be kept clean; 3, the patient can take only liquid food; 4, articulation is impossible. The Matas splint has been used by us and found very much superior to any other apparatus, but it too has several objectionable features: 1, The mouth piece bends at the slit and allows the fragments to get out of alignment; 2, the chin cup can not be adapted to the different variations in shape of the inferior maxilla; 3, all the pressure comes on the symphysis instead of being equally distributed along the body; 4, the splint extends about four inches in front of the teeth and on that account the bone is liable to be refractured; 5, the wearing of a Barton's bandage is necessary to keep it in place. To overcome these defects, we have devised the splint shown in the illustrations.

* Read before the Philadelphia County Medical Society.

DESCRIPTION OF THE SPLINT.

This splint is constructed on the principle of a clamp. It consists of a mouthpiece, chin cup, horizontal and vertical bars

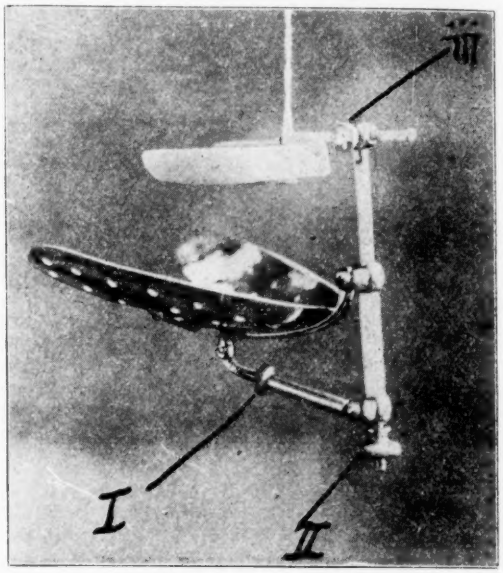

Fig. 2.—A splint for fracture of the inferior maxilla.

and a tube which fits over the vertical bar. The mouthpiece is a horse-shoe-shaped tray resembling the impression trays used by dentists. On the center of the inner or lingual surface of the plate is a small slot for the reception of the horizontal bar. The trays are made in two different sizes (Fig. 1). From these a selection can be made to fit any jaw by bending the plate slightly. The chin cup is a perforated aluminum Levis cup which extends from the symphysis to the angles; it is attached at the tip to the upper end of a hollow square tube by a swivel and at its base to the lower end of the square

Fig. 3.—The inferior maxilla splint in place.

tube by a jack screw, by which the chin cup can be regulated to fit any jaw from angle to symphysis (Fig. 2). The square tube fits over a square rod with a thumb screw at its lower end to regulate the pressure. The vertical square rod is pierced at its upper end by the horizontal square rod. The distance of the vertical rod from the teeth is regulated by a thumb screw at the junction of these two rods.

APPLICATION OF THE SPLINT.

The teeth should be cleaned with peroxid of hydrogen and washed with boric solution. The teeth on each side of the fracture, if they are present, should be wired together with fine brass wire to keep the fragments in apposition while the splint is being applied. Then the mouth piece, which corresponds to the size of the jaw, is bent until it accurately fits the alignment of the teeth. This plate with the horizontal rod in place is filled with modeling compound which has been softened by immersing it in hot water and is pressed down on the teeth. A few drops of cold water applied to the plate will harden the modeling compound. The chin cup and the vertical bar are placed in position and thumb screw No 1 (Fig. 2) is regulated until the chin cup fits the jaw. Then thumb screw No. 2 is regulated until the chin cup and mouth piece are held firmly together. Finally thumb screw No. 3, at the junction of the two rods, is tightened to keep the chin cup from slipping forward (Figs. 3 and 4).

Fig. 4.—The inferior maxilla splint in place.

The chin cup should be removed once or twice a day, the chin rubbed with alcohol and dusted with talcum powder, then the chin cup reapplied. The mouth piece should be removed and reapplied with new modeling compound every few days so as to keep the mouth clean. The pressure on the chin should be regulated so as not to cause a pressure sore.

This splint has been in use in eight cases. In every one the alignment of the teeth has been perfect.

FRACTURES OF THE RAMUS, THE ANGLE, THE CONDYLOID AND CORONOID PROCESSES.

An interdental splint is the only appliance that will hold the fragments of the above fractures in place. Of the numerous varieties of interdental splints the one shown here is the best. The variety of interdental splint which separates the upper and lower jaws one-half an inch is only mentioned to be condemned. The use of said splint is frequently followed by inability to approximate the upper and lower jaws by reason of union taking place at an angle. When the interdental splint of German silver (Fig. 5) is used, the assistance of a dentist is required.

METHOD OF MAKING THE INTERDENTAL SPLINT.

Impressions of both sets of teeth are taken in plaster-of-Paris; from these impressions zinc dies are made, over these dies German silver plates are swaged for the upper and lower jaws. The plates are trimmed to fit around the necks of the teeth and placed in the mouth on the upper and lower teeth with a little wax between them and the jaws are closed in their proper relation. The mouth is then opened and the plate removed with the wax, holding them in apposition while being soldered together. After the teeth have been cleaned and dried, the splint with both the upper and lower plates filled with cement of a creamy consistency is placed on the upper jaw and the lower pressed up in place. A Barton's bandage should be worn until the cement is hard. The splint should be removed at the end of three weeks, the mouth cleansed and the splint put back for one week more. It is not necessary to extract a tooth to enable the patient to swallow as he can very readily take liquid food through and around the teeth.

Fig. 5.—An interdental splint in German silver.

The splint shown in Figure 2 is manufactured by the Valzahn Company of Philadelphia.

MODIFICATION OF THE ESMARCH CHLOROFORM INHALER.

W. P. MEGRAIL, M.D.
WHEELING, W. VA.

This modification of Esmarch's inhaler possesses the following advantages:

1. A simple, firm and rapid method of fastening gauze or other material to the Esmarch frame by fitting the ring inside of the frame instead of on the outside, as in the old model.

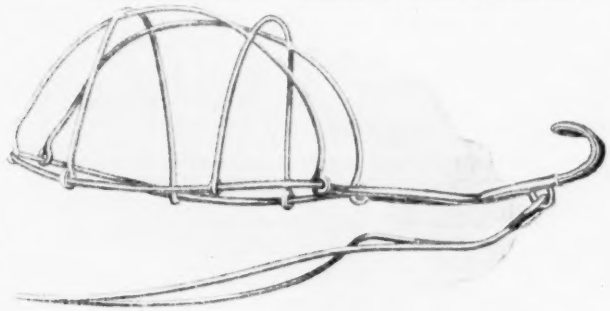

Figure 1.

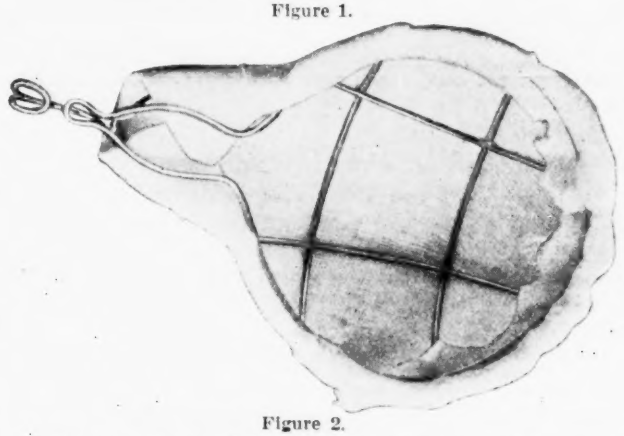

Figure 2.

2. The ring and frame are so fastened together that one can not be lost from the other, nor can they in any manner be put together wrong.

3. The patient is not annoyed by the rough edge of the gauze or metallic frame, and yet it will fit closer to the face, thereby requiring less of the anesthetic.

4. Should the gauze become soiled with vomit or sputa during anesthesia it can be almost instantly replaced with new.

New and Non-Official Remedies

THE FOLLOWING ARTICLES HAVE BEEN TENTATIVELY ACCEPTED BY THE COUNCIL ON PHARMACY AND CHEMISTRY OF THE AMERICAN MEDICAL ASSOCIATION FOR INCLUSION IN THE PROPOSED ANNUAL, "NEW AND NON-OFFICIAL REMEDIES." THEIR ACCEPTANCE HAS BEEN BASED LARGELY ON EVIDENCE SUPPLIED BY THE MANUFACTURER OR HIS AGENT, BUT TO SOME EXTENT ON INVESTIGATION MADE BY OR UNDER THE DIRECTION OF THE COUNCIL. CRITICISMS AND CORRECTIONS ARE ASKED FOR TO AID IN THE REVISION OF THE MATTER BEFORE FINAL ACCEPTANCE AND PUBLICATION IN BOOK FORM.

THE COUNCIL DESIRES PHYSICIANS TO UNDERSTAND THAT THE ACCEPTANCE OF AN ARTICLE DOES NOT NECESSARILY MEAN A RECOMMENDATION, BUT THAT SO FAR AS KNOWN IT COMPLIES WITH THE RULES ADOPTED BY THE COUNCIL.

W. A. PUCKNER, SECRETARY.

RULES GOVERNING THE ADMISSION OF ARTICLES TO THE BOOK, "NEW AND NON-OFFICIAL REMEDIES."

(The term "article" shall mean any drug, chemical or similar preparation used in the treatment of disease.)

RULE 1.—No article shall be admitted unless its active medicinal ingredients and the amounts of such ingredients in a given quantity of the article be furnished for publication. The general composition of the vehicle, its alcoholic percentage, if any, and the identity of other preservatives, if present, must be furnished.

RULE 2.—No chemical compound will be admitted unless sufficient information be furnished regarding tests for identity, purity and strength, the rational formula or the structural formula, if known.

RULE 3.—No article that is advertised to the public will be admitted; but this rule will not apply to disinfectants, and food preparation, except when advertised in an objectionable manner.

RULE 4.—No article will be admitted whose label, package or circular accompanying the package contains the names of diseases, in the treatment of which the article is indicated. The therapeutic indications, properties and doses may be stated. (This rule does not apply to literature distributed solely to physicians, to advertising in medical journals, or to vaccines and antitoxins.)

RULE 5.—No article will be admitted or retained concerning which the manufacturer, or his agents, make false or misleading statements as to geographical source, raw material from which made, or method of collection or preparation.

RULE 6.—No article will be admitted or retained concerning which the manufacturer or his agents make unwarranted, exaggerated or misleading statements as to the therapeutic value.

RULE 7.—Labels on articles containing "poisonous" or "potent" substances must show the amounts of each of such ingredients in a given quantity of the product. A list of such substances will be prepared.

RULE 8.—If the trade name of an article is not sufficiently descriptive of its chemical composition or pharmaceutical character, or is, for any other reason, objectionable, the Council reserves the right to include with the trade name a descriptive title in the book. Articles bearing objectionably suggestive names will be refused consideration.

RULE 9.—If the name of an article is registered, or the label copyrighted, the date of registration and a copy of the protected label should be furnished the Council. In case of registration in foreign countries, the name under which the article is registered should be supplied.

RULE 10.—If the article is patented—either process or product—the number and date of such patent or patents should be furnished.

ACETOZONE.

A mixture of equal parts of benzoylacetyl peroxide and an inert absorbent powder.

Benzoylacetyl peroxide, $C_6H_5CO.O.O.COCH_3 = C_9H_8O_4$ is made by the oxidation of a mixture of benzaldehyde and acetic anhydride.

Benzoylacetyl peroxide occurs in white, shining crystals, melting at 36.6° C. (98°F.). When heated it slowly decomposes and volatilizes. Water at 25° C. (77° F.) dissolves one part in 1,560 or 0.639 Gm. in 1,000 Cc. It is soluble in oils to the extent of about three per cent., slightly soluble in alcohol, and fairly so in ether, chloroform, and carbon tetra-chloride, though all solvents decompose it with the exception of neutral petroleum oils.

In the presence of water it undergoes hydrolysis and slowly decomposes. This change, however, does not take place with sufficient rapidity to prevent its use in aqueous solution; in fact such hydrolysis is necessary to develop its full germicidal activity. On account of its ready decomposition, acetozone should be kept in a dry place.

For various reasons it has been found necessary to add an inert absorbent powder. As found in the market, acetozone is of a grayish white color, possessing the properties of the crystalline substance, with the exception that the absorbent powder employed is insoluble.

Actions and Uses.—Benzoylacetyl peroxide belongs to a class of compounds known as the organic peroxides in which an excess of oxygen has been combined in such a way that it is somewhat slowly given off in a nascent condition. On contact with water it hydrolyzes, forming benzo-peracid and aceto-peracid which exert marked oxidizing and germicidal action. In consequence of this change, these compounds are thought to be particularly adapted for internal administration. The germicidal and antiseptic properties of this substance have been attested by the experimental results of several observers. It has been used in ophthalmic, aural and nasal practice with asserted good effects as an antiseptic. It has also been applied internally, especially in typhoid fever, with a view to the disinfection of the intestinal canal, and appears to be an intestinal antiseptic.

Dosage.—Acetozone is generally employed in aqueous solution prepared as follows: Add acetozone to warm water in the proportion of 1 Gm. to 1000 Cc. (15 grains to the quart), shake vigorously for five minutes, and allow to stand for about two hours. Decant the liquor as required. This solution may be drunk *ad libitum*, two quarts or more being taken by an adult in twenty-four hours. Acetozone is also used in oily solution as an inhalant.

Manufactured by Parke, Davis & Co., Detroit, Mich. U. S. patents No. 710,005 and No. 717,016. U. S. trademark.

ACETOZONE INHALANT.

A solution of benzoylacetyl peroxide in liquid petrolatum.
Formula: One hundred grammes contain

Benzoylacetyl peroxide	1.0 Gm.
Chloretone (chlorbutanol)	0.5 Gm.
Refined liquid petrolatum	98.5 Gm.

Dosage.—It is to be inhaled in the form of a very fine spray, or nebula, best produced by an atomizer especially designed for oily liquids.

Prepared by Parke, Davis & Co., Detroit, Mich.

ACET-THEOCINSODIUM.

SOLUBLE THEOCIN.

Acet-theocinsodium, $C_7H_7N_4O_2Na + CH_3.COONa$, is a double salt of sodium acetate and 1,3-dimethylxanthine-sodium (theophyllinsodium).

It is a white crystalline powder, containing about 60 per cent of theocin. It dissolves in 23 parts of water, but is insoluble in alcohol or ether.

Actions and Uses.—It has the diuretic properties of theocin, reinforced by the diuretic action of sodium acetate, and, being more soluble, it has been claimed to be more readily absorbed and better tolerated than theophylline.

It is recommended in cardiac affections, nephritis, dropsy, etc.

Dosage.—0.2 to 0.35 Gm. (3 to 5 grains), best given after meals.

Manufactured by Farbenfabriken vorm. Friedr. Bayer & Co., Elberfeld, Germany (Continental Color & Chemical Co., New York). U. S. patent.

ADNEPHRIN EMOLLIENT.

An ointment composed of the suprarenal active principle and a neutral base (1-1000).

Recommended as a local application where prolonged use is required.

Prepared by F. Stearns & Co., Detroit, Mich. U. S. trademark.

ADNEPHRIN OIL SPRAY.

A 1-1000 solution of suprarenal active principle in a neutral oil, aromatized.

The preparation is applied as a spray to the mucous membranes in congestive and inflammatory affections, preferably after washing with Dobell's solution.

Prepared by F. Stearns & Co., Detroit, Mich. U. S. trademark.

ADNEPHRIN SOLUTION.

A sterile solution (1-1000) of the suprarenal active principle in physiologic salt solution containing one-half of one per cent. of methaform (chlorbutanol).

Actions and Uses.—The actions and uses of this preparation are described under Suprarenal Alkaloid.

Dosage.—The dose internally is from 0.2 to 2.0 Cc. (3 to 30 minims) in water. Adnephrin is also used in oily solution as a spray, see Adnephrin Oil Spray, and in the form of ointment, see Adnephrin Emollient.

Prepared by F. Stearns & Co., Detroit, Mich. U. S. trademark No. 41,980.

ADRENALIN.

The active alkaloid of suprarenal gland, prepared by the method of Takamine, see Suprarenal Alkaloid.

Adrenalin is a light, white, microcrystalline powder, possessing a slightly bitter taste. On heating it turns brown at 205° C. (401° F.), melts, swells and decomposes simultaneously, at 207° C. (404.6° F.).

For Tests, Incompatibilities, Actions and Uses see Suprarenal Alkaloid.

Dosage.—Locally, 1-1000 to 1-15000 solution, as the chloride. Internally, 0.3 to 2 Cc. (5 to 30 mm.) of 1-1000 solution. Hypodermically, 1 to 15 drops of 1-1000 solution, diluted with sterile water.

Manufactured by Parke, Davis & Co., Detroit, Mich. U. S. patents Nos. 730,175, 730,176, 730,196, 730,197, 730,198, 753,177. U. S. trademark.

ADRENALIN CHLORIDE SOLUTION.

A 1:1000 solution of adrenalin hydrochloride in physiologic salt solution, preserved by the addition of 0.5 per cent of chloretone (chlorbutanol).

Dosage.—See adrenalin.

Prepared by Parke, Davis & Co., Detroit, Mich. U. S. trademark.

ADRENALIN SUPPOSITORIES.

1 part of adrenalin to 1000 parts of oil of theobroma (cocao butter). Each suppository weighs about 1 Gm. (15 grains).

Prepared by Parke, Davis & Co., Detroit, Mich. U. S. trademark.

AGURIN.

THEOBROMINE-SODIUM-ACETATE.

Agurin, $C_7H_7N_4O_2Na+NaC_2H_3O_2$, is a double salt of sodium acetate and theobromine-sodium.

It is prepared by a method similar to that used in making theobromine sodium salicylate, sodium acetate being substituted for sodium salicylate.

It is a white, finely crystalline powder, containing 60 per cent. of theobromine. It is freely soluble in water, not very readily soluble in alcohol, but more so in hot alcohol. It is quite hygroscopic, and in watery solutions gradually splits up into its components, and more readily in the presence of carbon dioxide.

It is precipitated and decomposed by carbon dioxide and by acids; it forms a bluish white precipitate with silver nitrate, a blue precipitate with copper sulphate, white with tartaremetic, red-brown with ferric salts. It is not readily precipitated by Mayer's reagent, nor by iodine.

It is incompatible with carbonated beverages, acids, saccharine and mucilaginous liquids, and most of the alkaloid reagents.

Actions and Uses.—It acts like theobromine, over which it has the advantage of great solubility and that it is well tolerated by the stomach. While inferior in diuretic power to theophyllin (which see), it is said to have greater power in sustaining the diuresis produced.

Dosage.—0.5 to 1 Gm. (7 to 15 grains), preferably in wafers or capsules. If in solution, this should be freshly prepared (with peppermint water) and without sugar or mucilage.

Manufactured by Farbenfabriken vorm. Friedr. Bayer & Co., Elberfeld, Germany (Continental Color & Chemical Co., New York). U. S. trademark.

AIROL.

BISMUTH OXYIODOGALLATE. AIROFORM. BISMUTH IODOSUBGALLATE.

Airol, $C_6H_2(OH)_3(COOBiI(OH))=C_7H_5O_6IBi$., is a combination of bismuth oxyiodide (subiodide) and gallic acid.

It is prepared by heating molecular quantities of bismuth subgallate and hydriodic acid or bismuth oxyiodide and gallic acid, in the presence of water, until a grayish-green product results, which is drained and dried.

It is a voluminous grayish-green, odorless and tasteless powder, insoluble in alcohol, ether, chloroform, and olive oil, slightly soluble in glycerin. It is practically insoluble in water, communicating to water a red color on standing, slowly in the cold, but readily when heated, being decomposed with liberation of iodine and bismuth subgallate. It is readily soluble, with decomposition, in dilute alkalies and mineral acids. It is decomposed on exposure to moist air, turning red, but in admixture with glycerin and a little water it long remains unaltered.

Airol may be identified by the appropriate tests for its components.

It is incompatible with water and calomel. It should not be exposed to moist air.

Actions and Uses.—As it liberates iodine in the nascent state in the presence of wound secretions it has been recommended as a desirable and efficient substitute for iodoform in the treatment of wounds, burns, skin diseases, gonorrhea, etc.

Dosage.—It is used externally in the pure state or diluted with talc, or in the form of a 10 per cent. suspension in equal parts of glycerin and water, or as a 10 to 20 per cent. ointment with 2 parts of petrolatum and 7 parts of wool fat.

Manufactured by F. Hoffmann-LaRoche & Cie., Basle, Switzerland (The Hoffmann-LaRoche Chemical Works, New York). U. S. patent No. 544,101, German patents No. 80,399 and 82,593. U. S. trademark No. 26,405.

ALPHA-EUCAINE HYDROCHLORIDE.

EUCAINE HYDROCHLORIDE "A." ALPHA-EUCAINE.

Alpha-eucaine hydrochloride is the hydrochloride of benzoyl-methyl-oxypiperidine-carbonic methyl ester.

It is prepared by treating triacetonamine with hydrocyanic acid, hydrolyzing the product by boiling with water, then successively introducing the benzoyl and methyl group by treatment with benzoyl chloride and methyl iodide, purifying the synthetic base (alpha-eucaine) so obtained by crystallization from ether or alcohol, and converting it into hydrochloride by solution in dilute hydrochloric acid and crystallization.

It occurs in colorless crystalline scales or powder, neutral in reaction. It is soluble in 10 parts of cold water. Its solutions may be sterilized without change. The base is precipitated on addition of alkalies or their carbonates.

Its 5 per cent. aqueous solution yields a white precipitate with mercuric chloride, which distinguishes it from beta-eucaine hydrochloride, but not from cocaine, from which it is distinguished by a yellow crystalline precipitate produced if 3 drops of a 5 per cent. aqueous solution of chromic acid are added to 5 Cc. of a 1 per cent. alpha-eucaine solution.

It is incompatible with alkalies and their carbonates.

Actions and Uses.—The action of alpha-eucaine is similar to that of cocaine, but it is regarded as three and three-fourths times less toxic than cocaine. In large doses it first stimulates and then paralyzes the central nervous system; it slows the heart and produces a fall of blood pressure. Locally it acts like cocaine as an anesthetic, but dilates the blood vessels instead of contracting them. It does not dilate the pupil. It is more irritating to the mucous membrane than cocaine or than beta-eucaine. It has a moderate bactericidal action. It is used as a substitute for cocaine in general and minor surgery, but beta-eucaine is preferred for applications to the eye.

Dosage.—2 to 5 or even 9 per cent. solutions. Not more than 2 Cc. (30 minims) of a 4 per cent. solution should be used at one time.

Manufactured by Chemische Fabrik auf Actien, vorm. E. Schering, Berlin (Schering & Glatz, New York). U. S. trademark No. 28,438.

ALPHOZONE.

SUCCINIC DIOXIDE, SUCCINIC PEROXIDE, DISUCCINYL PEROXIDE.

Alphozone, $(COOH.CH_2CH_2CO)_2O_2 = C_8H_{10}O_8$, is an organic peroxide resulting from the action of hydrogen dioxide on succinic anhydride.

It is prepared by shaking 25 Cc. of a 7.5 per cent. solution of hydrogen peroxide with 10 Gm. of ordinary crystallized succinic anhydride, taking care that the temperature does not rise above 30° C. (86° F.).

It is a fluffy, white, crystalline powder, the crystals being small irregular plates. It dissolves in 30 parts of water at ordinary temperature. It is moderately soluble in alcohol, acetone, and ethyl acetate, sparingly soluble in ether, insoluble in benzene, chloroform and ligroin. Odorless or nearly so; softens at 115° C. (239° F.) and melts at 127.° C. (262° F.) with decomposition. When brought into a flame it explodes, but it does not explode on percussion or friction. It deteriorates slightly on continued exposure to air, but if kept tightly stoppered and in a dark place it remains unchanged indefinitely.

It is a powerful oxidizing agent liberating iodine from potassium iodide. It can be identified by its physical properties and its powerful oxidizing action. To test its strength add 2 Gm. of potassium iodide to 1Gm. of alphozone dissolved in 60 Cc. of distilled water. To this slowly add decinormal solution of sodium thiosulphate with constant agitation until the red brown color of the iodine is just discharged. Each cubic centimeter of sodium thiosulphate solution is equivalent to 0.0117 Gm. of alphozone. 1 Gm. of pure alphozone is equivalent to 85.41 Cc. decinormal sodium thiosulphate solution.

Actions and Uses.—Alphozone belongs to the class of organic peroxides, and by its powerful oxidizing power becomes a germicide and antiseptic.

Dosage.—Alphozone is also marketed in the form of tablets containing, each 0.065 Gm. (one grain), of alphozone, which are used for making solutions, one tablet to 60 Cc. (2 fluid ounces) of water giving a solution (1 to 1000) suitable for general external use; but, as a nasal douche, one tablet in 180 Cc. (6 fluid ounces) of water is often preferred.

Manufactured by F. Stearns & Co., Detroit, Mich. U. S. patents Nos. 768,561, 768,562 and 768,563. U. S. trademark No. 41,981.

ALUMNOL.

ALUMINUM BETANAPHTHOL-DISULPHONATE. ALUMINI NAPHTHOLSULPHONAS.

The aluminum salt of β-naphtholdisulphonic acid, $Al_2(C_{10}H_5.OH.(SO_3)_2)_3 = Al_2C_{30}H_{18}O_{21}S_6$.

It is prepared by mixing solutions of barium naphthol-disulphonate and aluminum sulphate in molecular proportions, filtering off the barium sulphate, and evaporating the filtrate to dryness.

It forms a fine, nearly white, non-hygroscopic powder, soluble in 1.5 parts of water, forming a faintly acid and slightly fluorescent solution.

It is also easily soluble in glycerin, but sparingly soluble in alcohol and insoluble in ether. When dried it loses about 9 per cent. of water, and when exposed to the air it is darkened in consequence of its reducing properties. It is precipitated from solution by albuminous and gelatinous bodies, but these precipitates are redissolved in excess of the latter bodies.

The aqueous solution (1-10) should be clear, and after acidulation with hydrochloric acid should become at most only slightly turbid, and only just tinted bluish by potassium ferrocyanide; nor should precipitates be produced in it on the addition of diluted sulphuric acid or solution of ammonium oxalate. The dried compound should yield 12.7 per cent. of ash (alumina) on incineration.

It should not be exposed to the air, and is incompatible with salts of silver, or other reducible salts.

Actions and Uses.—It is an astringent and mild antiseptic. It is claimed that it can be used as a mild astringent, an irritant or a caustic, according to the strength of the solution, and it is asserted that it exerts a peculiarly destructive action on gonococci. It has been recommended for a variety of affections in which a caustic, astringent or antiseptic is indicated. It has been particularly recommended for gonorrhea in females, especially when affecting the endometrium.

Dosage.—As a surgical antiseptic, in 0.5 to 3 per cent. solutions; in gynecology, in 2 to 5 per cent. solutions; in otology and laryngology, either as powder or in ¼ to 1 per cent. solution as douches, washes or gargles; as cautery, in 10 to 20 per cent. solution.

Manufactured by Farbwerke, vorm. Meister, Lucius & Bruening, Hoechst a. M. (Victor Koechl & Co., New York). German patent No. 74,209.

AMINOFORM.

A name applied to Hexamethylenamina, U. S. P.

Sold by C. Bischoff & Co., New York.

ANESTHESIN.

PARAMIDOBENZOIC ACID ETHYL ESTER.

Anesthesin, $C_6H_4(NH_2)(COOC_2H_5)\,1:4 = C_9H_{11}O_2N$ is the ethyl ester of paramidobenzoic acid, obtained by the reduction of paranitrobenzoic acid.

Paranitrobenzoic acid is obtained by the oxidation of paranitrotoluene, and this may be ethylized by the action of sulphuric acid and alcohol and the ester so obtained reduced to paramidobenzoic acid ethyl ester by the action of zinc and hydrochloric acid, or the acid may first be reduced and subsequently converted into the ethyl ester.

It is a white, crystalline powder, easily reduced to impalpability, melting at 90° to 91° C. (194° to 195.8° F.); odorless and tasteless, but producing a sensation of numbness when placed on the tongue; almost insoluble in cold and difficultly soluble in hot water; soluble in six parts of alcohol, in ether, benzene and, to the amount of 2 to 3 per cent., in fatty oils. In oil solutions it may be sterilized without decomposition, but by prolonged boiling or by warming with dilute alkalies it is split up into alcohol and paramidobenzoic acid.

It should form clear, colorless and neutral solutions in alcohol or ether; after acidification with nitric acid it should not give a precipitate with silver nitrate. Its solution in dilute hydrochloric acid (1 to 10) is not affected by hydrogen sulphide. If a few drops of sodium nitrite solution be added to the slightly acidulated aqueous solution followed by some alkaline betanaphthol solution, a cherry red coloration of bluish shade is produced, which changes to orange on further addition of hydrochloric acid. It is decomposed by prolonged heating with water and is incompatible with alkalies and their carbonates.

Actions and Uses.—It was introduced as a substitute for cocaine and is a local anesthetic, similar in its action to orthoform and said to be equally effective, but free from irritant action and toxicity. The anesthetic action, like that of the related compound orthoform, resembles that of cocaine, but is purely local, does not penetrate the mucous membranes, and in consequence of its insolubility the compound can not be used by hypodermic injection. In consequence of its insolubility the anesthetic effect is more prolonged than that of cocaine.

It is recommended in various forms of gastralgia, in ulcer and cancer of the stomach for the relief of pain, and is applied locally in rhinologic and laryngeal affections, urethritis, etc.; it is also recommended for anesthetizing wounded surfaces, burns, ulcerations and painful affections of the skin. It is more effective in cases where the skin is broken.

Dosage.—Internally, 0.3 to 0.5 Gm. (5 to 8 grains), in pastilles. Externally it is applied as a dusting powder, either pure or diluted. It may be applied as an ointment or in the form of suppositories.

Manufactured by Farbwerke, vorm. Meister, Lucius & Bruening, Hoechst a. M. (Victor Koechl & Co., New York). German patents Nos. K 19,416, 19,495 Anm.

ANTIPYRINE SALICYLATE.

ANTIPYRINÆ SALICYLAS. SALIPYRINE. SALAZOLON. SALIPYRAZOLON.

Antipyrine salicylate, $C_{11}H_{12}N_2O.C_6H_4OH.COOH = C_{18}H_{18}N_2O_4$, is a weak chemical combination of antipyrine and salicylic acid.

It is prepared by heating antipyrine and salicylic acid, in molecular proportions, on the water bath, allowing the oily product to congeal by cooling, and crystallizing it from alcohol.

It occurs as a white, coarsely crystalline powder, or in hexagonal tabular crystals, melting at 91° to 92° C. (195.8° to 197.6° F.); odorless, slightly sweet; soluble in 200 parts of cold and 40 parts of boiling water; readily soluble in alcohol, less readily in ether. It is decomposed by acids with the elimination of salicylic acid, and by alkalies with the elimination of antipyrine.

Its aqueous solution is rendered milky by tannic acid, then colored green by the addition of a few drops of fuming nitric acid. It is colored deep red by ferric chloride, passing to violet-red on copious dilution with water. It must not be affected by hydrogen sulphide.

It is incompatible with acids, alkalies and tannins.

Actions and Uses.—This compound possesses the properties of both antipyrine and salicylic acid and combines the analgesic power of the one with the antirheumatic action of the other. It has been used with good results in sciatica, rheumatic fevers, chronic rheumatism, influenza, pleurisy, dysmenorrhea, etc.

Dosage.—0.3 to 2.0 Gm. (5 to 30 grains) in cachets or capsules.

ANTITHERMOLINE.

A name applied to a preparation said to be made according to the following formula: Each pound contains 4000 grains of imported washed kaolin, washed and purified, 14 grains boric acid, 14 grains oil of eucalyptus, menthol and thymol combined, and 4.9 fluid ounces of glycerin. It closely resembles the Cataplasma Kaolini, U. S. P.

Prepared by G. W. Carnrick Co., New York.

ANTITHYROID PREPARATIONS.

Preparations obtained from the blood or milk of animals, after the removal of the thyroid glands.

The use of these preparations is based on the theory that the thyroid gland secretes products which are toxic, but which neutralize, and are neutralized by, other toxic substances produced elsewhere in the body. Removal of the thyroid glands, therefore, leads to the accumulation of these second toxic substances as evidenced by the phenomena of cachexia strumipriva and myxedema. On the other hand, the blood or milk of such animals is capable of preventing the effects of a hypersecretion of thyroid substance, such as is supposed to occur in Basedow's disease (exophthalmic goiter).

These views are still largely hypothetical; but the majority of clinical observers report markedly beneficial results in the milder forms of the disease and in obscure nervous disorders which are supposedly connected with thyroid hypersecretion. The effects are less pronounced in the more severe forms. The action is merely palliative and other measures of treatment should not be neglected.

Improvement occurs in two or three weeks and is indicated by an amelioration of the nervous symptoms, tremors, palpitation, insomnia and excitability.

The administration must be long continued. Oral and hypodermic administration are equally effective, but the former is usually preferred. These preparations are not toxic, even when very large doses are used.

ANTITHYROIDIN, MŒBIUS.

SERUM ANTITHYROIDEUM, MERCK.

The blood-serum of sheep from which the thyroid gland has been removed at least six weeks before the blood is drawn, preserved by the addition of 0.5 per cent. of phenol.

It is an amber-colored fluid, with faint odor and taste of phenol (carbolic acid). It is marketed in amber-colored vials containing 10 Cc. (2½ drams). With proper precautions, it is said to keep indefinitely.

Actions and Uses.—For actions and uses see Antithyroid Preparations.

Dosage.—It is administered by the mouth in doses beginning with 0.5 to 1 Cc. (8 to 15 min.) three times a day, gradually increasing the dose as necessary.

Manufactured by E. Merck, Darmstadt. (Merck & Co., New York.)

ARGENTAMIN.

ETHYLENE-DIAMINE-SILVER NITRATE. LIQUOR ARGENTAMINI.

An aqueous solution of silver nitrate and ethylene-diamine, corresponding to 10 per cent. of silver nitrate.

It is prepared by dissolving 10 parts each of silver nitrate and ethylene-diamine in 100 parts of water. It is a colorless, alkaline liquid, turning yellow on exposure to the light, but not precipitable by chlorides or by albumin. It is not materially injured by exposure to light, as it may be cleared by filtration.

Actions and Uses.—It is antiseptic and astringent like other silver salts, with the asserted advantage of being non-irritant and more penetrating than silver nitrate. It is said to be useful in all cases where the non-caustic action of silver nitrate is indicated.

Dosage.—It may be used in the anterior urethra in 0.25 to 1 per cent. solution; in the posterior urethra in from 1 to 4 per cent. solution; in ophthalmology in 5 per cent. solution.

Mnfd. by Chemische Fabrik auf Actien, vorm. E. Schering, Berlin. (Schering & Glatz, New York.) German patent, No. 74,634.

ARGONIN.

CASEINSILVER. SILVERCASEIN.

A soluble casein compound containing 4.28 per cent. of silver.

It is prepared by precipitating an alkaline solution of casein with silver nitrate and alcohol. It is a fine, nearly white powder, easily soluble in water, forming an opalescent, faintly alkaline solution, which becomes clear on the addition of sodium chloride. It is also soluble in alkaline solutions, in egg albumin, blood serum, etc.

The usual reagents for silver do not affect its aqueous solution (1-20), which should remain clear on addition of sodium chloride, and should not be affected by hydrogen sulphide. On incineration, argonin should yield at least 4 per cent. of silver, which may be identified by the usual tests after solution in dilute nitric acid. It is incompatible with acids.

Actions and Uses.—Its action and uses are similar to those of silver nitrate, but it is claimed to have greater power of permeating living colloid membranes than other silver albumoses. It is applied as an injection in 0.1 to 0.2 per cent. solution; in ophthalmic practice a 10 to 20 per cent. solution in glycerin may be used.

Dosage.—It is generally used in 0.5 per cent. solution, but even 20 per cent. solutions have been injected without producing irritant symptoms.

Manufactured by Farbwerke vorm. Meister, Lucius & Bruening, Hoechst a. M. (Victor Koechl & Co., New York.) U. S. patent No. 575,277.

ARGYROL.

SILVER VITELLIN.

A compound of a derived proteid and silver oxide, containing from 20 to 25 per cent. of silver.

The so-called vitellin is said to be prepared by electrolytic decomposition of serum albumin. To this product, finely suspended in water, is added freshly precipitated, moist silver oxide and the mixture is heated under pressure until combination occurs. The liquid is then evaporated to dryness *in vacuo*. The change in the proteid is in question; probably a compound of hydrolyzed proteid (serum albumin) and silver oxide is formed.

Argyrol occurs in black glistening, hygroscopic scales, freely soluble in water and glycerin, insoluble in oils and alcohol. The solution is yellowish or black, depending on concentration, and is not affected by boiling. It gives a slight cloudiness or precipitate with sodium chloride and hydrochloric acid; on addition of ferric chloride the color is discharged with formation of a white cloud. With alkali and copper sulphate it gives a slight biuret reaction. It has a slight metallic taste. Silver is recognized in the usual way.

The compound is said to be incompatible with acids and most of the neutral and acid salts in strong solution.

Action and Uses.—Solutions of argyrol (20 to 50 per cent.) are said to be non-irritating to mucous membranes. Taken internally it is said to be non-toxic. It is claimed to be an antiseptic. It is recommended in urethritis and cystitis, in conjunctivitis and in affections of the nose, throat and ear.

Dosage.—It is employed in from 10 to 25 per cent. and even stronger solutions.

Manufactured by Barnes & Hille, Philadelphia. U. S. trademark.

(*To be continued.*)

THE JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION

103 DEARBORN AVENUE . . . . CHICAGO, ILL.

Cable Address . . . "Medic, Chicago"

Subscription price.....Five dollars per annum in advance

[*For other information see second page following reading matter.*]

SATURDAY, SEPTEMBER 15, 1906.

THE MEDICAL RECORD: AN ENEMY OF THE AMERICAN MEDICAL ASSOCIATION.

For many years the New York *Medical Record* was the leading medical weekly in America. Next to the *American Journal of the Medical Sciences,* it represented, better than any other journal, the best there was in American medicine. William Wood & Company, the owners, for nearly fifty years—practically since the present nominal head of the house, William H. S. Wood, in 1863, became a member of the firm—have conducted an exclusive medical book publishing business. The imprint of the firm has been on the title page of some of the best medical works this country has produced. This medical book and journal publishing business is presumed to have been and to be a paying one. The journal-publishing part, especially the *Record,* undoubtedly has been a source of a comfortable annual revenue.

The patronage of William Wood & Company, as medical publishers, came from the better class of physicians—those who read and think. Their journals have been of such a character as also to appeal to the intelligent in our profession. Under such circumstances, one would naturally suppose that they would have realized that the movements inaugurated by the American Medical Association against the nostrum evil, and for a better condition in the profession, would be endorsed by the thinking class of physicians—that is, by those to whom William Wood & Company were indebted for their success in the past and on whom they must depend for their support, as medical book publishers, in the future; hence, that they would, for policy's sake at least, have supported the Association in its laudable efforts. But they have done just the opposite.

Through their periodical, the *Medical Record,* they—or their employé—have seen fit, in four editorials, to attack the American Medical Association, its officers and its present activities. Their criticisms—if these attacks may be so dignified—ramify into every phase of the Association, its management, and its work. Their object, it is quite evident, was to discredit the officers of the Association, to reflect on the Association itself and to create dissension among its members. The animus prompting them also is perfectly plain to those who know how the subscriptions to the *Record* have been falling off and also to those who have observed the mass of nostrums in its advertising pages. The House of Delegates, the Board of Trustees and all the officers of the American Medical Association welcome honest criticism and suggestions that are made for the purpose of bettering conditions, but they resent attacks made to disrupt and to disorganize.

The editorials consist of insinuations and deliberate misstatements of facts and bear evidence of having been written by one who has little, if any, knowledge of the history of the Association, of the details of organization or of the work the Association is doing. These attacks should be ignored, but, appearing in a journal that in the past has been considered reliable, some of its readers have believed that there must have been some basis for the attacks, not realizing that the *Record* would stoop to malicious misrepresentations. Further, certain medical journals, for well-known reasons, have made all possible use of the matter. Knowing that their own outcries of "graft," "fraud" and "clique" were laughed at, they could now say, "You did not believe what *we* printed; now read what the *Medical Record* says."

It would be more satisfactory to quote *in extenso* from these editorials—for this would give our readers an idea of what they are, in which case no comment of ours would be necessary—but we have not the space. However, although the editorials were in the form of vague generalities, insinuations and inuendos, it evidently was the intention of the editor of the *Record* to have his readers accept the following propositions:

1. That the policy and the management of the American Medical Association is in the hands of a self-seeking "ring or clique."

This insinuation is constantly made by the editor of the *Record.* What evidence has he for such a statement? On what authority does he insinuate that the House of Delegates, composed of men elected from every state and territory in the Union and changing its membership every two years, is or can be dominated and controlled by a few men for their own purposes? Such a charge is absolutely false, is supported by no evidence whatever and is a direct insult to the representatives of the profession, who are chosen by their fellow physicians to administer and protect their interests. Never, in the history of the American Medical Association, was there assembled a more representative, fearless and independent body of men than that composing the House of Delegates at Boston.

2. That the "financial reports of the American Medical Association have been disquietingly analogous to those of insurance companies and have dealt in glittering generalities."

Had the solicitude of the editor of the *Record* regarding the affairs of the American Medical Association extended over a longer period than that of his own incumbency of his present exalted position, he would be aware that the reports of the Board of Trustees for the last few years have been far more complete and more

detailed than at any other period of the Association's existence. We recommend to the editor of the *Record* a casual perusal of the Association's proceedings, not only for the current year, but for preceding years, before he attempts to misinform his readers.

3. That there is, in the minds of honest and intelligent members of the organized profession, a suspicion of "graft;" that the accounts of the Association have been "juggled;" that "more than 23 per cent. of what should have been received in dues and subscriptions remains unaccounted for."

This also is untrue, and, furthermore, it is an infamous libel on the members of the Board of Trustees, who have, without one cent of pay and at a sacrifice of their own time and professional work, looked after the business of the Association. The members of the board are men of high rank in the profession and of unblemished personal character. On what grounds does the editor of the *Record*, by covert insinuation and baseless inuendo, attempt to question their integrity? The standing of each of them is as much above suspicion as the editor of the *Record* could possibly wish his own to be. What evidence or proof has he to justify him in attacking honorable members of his own profession? As a gentleman and a member of a scientific brotherhood, it is incumbent on him either to retract his statements or to produce such evidence as will justify his malicious utterances.

4. That the House of Delegates at Boston was dissatisfied with the report of the Board of Trustees and that it was denied details regarding the business of the Association.

This statement every member of the House of Delegates knows to be false. The report of the Board of Trustees was adopted by an unanimous vote. During the reading of the report, the complete pay-roll, showing every cent paid in salaries and wages to the 150 and more employés of the Association, from the Editor to the errand boy, was submitted to the House. Detailed statements, covering every item mentioned in the auditor's report, were submitted, or were ready for the information and inspection of the members of the House. We fear the *Record* was not very well served by its Boston representatives and we suggest that hereafter more reliable and accurate data be secured as the basis for future attacks. Incidentally, we are constrained to ask by what right the *Medical Record*, or its owners, the commercial house of William Wood & Co., demand the publication of the pay-roll of the American Medical Association for the scrutiny and information of any and all commercial interests. Is such a list published by any fraternal organization, by any company or by any corporation anywhere?

5. That the surplus of the American Medical Association is nearly a quarter of a million dollars.

The editor of the *Record* has perpetrated the sophomoric error of confusing surplus with assets. The actual surplus, as shown by the auditor's report, published in THE JOURNAL, was $60,084.21. The assets of the American Medical Association, as set forth in the same report, were, on Jan. 1, 1906, $247,482.91, but the editor of the *Record* failed to note, or was unable to grasp the fact, that this included real estate and buildings, furniture and machinery, stock and cash on hand, as well as bills and accounts receivable. We have the statement of the editor of the *Record* himself made some months ago, that "the editorial and the business departments of the *Record* are absolutely separate." If his conception regarding the surplus is to be taken as a sample of his financial ability, we can not but commend the foresight of William Wood & Co. in making such an arrangement.

6. That the Treasurer of the Association, to whom the editor of the *Record* sarcastically refers as a "prominent bank director and successful financier," is responsible for the investments of the surplus of the Association.

The most superficial acquaintance with the Constitution and By-Laws of the American Medical Association would have shown the editor of the *Record* that the Treasurer is simply the custodian, under heavy bonds, of the surplus funds of the Association, which he holds subject to the order of the Board of Trustees. The Trustees themselves, and not the Treasurer, are responsible for the investment of the surplus funds of the Association.

7. That the Association has become so big "that the number of papers presented in the various sections is too great to permit of their being assimilated by the hearers, or profitably discussed."

If our self-appointed critic had been in touch with the section work, he would have known that there have been for the last four or five years fewer papers than ever before; that sixty, seventy or eighty papers in a section was not an uncommon thing in years gone by; that now, by a general law, the number is limited to forty and that some of the sections have fixed a still lower limit, some as low as twenty-five. As the editor of the *Record*, so far as we know, never attended a session of the Association, he is excusable for this misdirected criticism.

8. That there is no need of the proposed medical directory; that the proceeds of the directory will increase the income of the Association to half a million dollars; that the sales of the book to non-members and the profits of the advertising will pay the cost of production and that the publication of the American Medical Directory is absolutely without excuse.

The consideration of the Directory demands a chapter by itself, which we propose soon to present to our readers. Suffice it to say at this point that the editor of the *Record* either has no conception of the objects of the Directory and what it will stand for, or else purposely ignores them. These matters have been fully discussed in THE JOURNAL time and again. In THE JOURNAL, Nov. 18, 1905, for instance, appeared a detailed statement of the plan and scope of the work, which evidently

the editor of the *Medical Record* has never read. This, however, is no excuse for his ignorance. His profound suggestion that the Association give away twenty thousand—now it would be twenty-six thousand—copies of the Directory to its members is too puerile for comment. We once more pause to congratulate William Wood & Co. that their editor has no connection whatever with the business department of the *Record*.

9. That there is "loudly expressed dissatisfaction with the present management all over the country, which is assuming definite form in the organizing of new state medical societies and even serious talk of a rival national organization."

Will the editor of the *Record* kindly name any state in which a new state medical society is being organized? The Association office is presumed to know the actual conditions regarding medical organization throughout the country. But, evidently, this presumption is unfounded. The *Record* has discovered a condition that was not known to exist. Now, what are the facts? Never before was there less opposition to the plan of organization than now prevails in every state and territory, all but two being organized on a uniform basis. Until two years ago, there was opposition in several states; now there is practically none. In Georgia, immediately after the reorganization of the State Association, there was some disaffection on the part of a few physicians and some transient agitation for the organizing of another state society, but this amounted to nothing. In one county in Michigan, six dissatisfied physicians agitated the organization of a new state body, but nothing definite resulted. This movement was never looked on seriously by those connected with the state society. The disaffection in both instances was the result of purely local conditions in no way related to the American Medical Association and was merely a remnant of the disaffection that at one time prevailed in many states. Never has the profession been more united, never before has it been so influential, never have there been so few local jealousies, and never has there been a more hopeful outlook in every way than now.

10. That the Walker resolution, introduced at the Boston session, was defeated through the efforts of the officers or the Board of Trustees or their friends, and that an attempt was made to suppress an investigation of the business affairs of the Association.

Again, we are led to deplore the inaccuracy of the reports received by the *Record*. The facts are these: The moment the reading of the resolution was concluded, it was at once tabled by the practically unanimous vote of the House. There was no discussion. The members of the House cared for none. There was no time for the officers to express themselves even had they desired to do so. The statement that the resolution was opposed by the officers, the trustees or their friends is an absolute falsehood, unless the entire membership of the House of Delegates is included under the designation "friends." The Association and its officers are fighting secrecy and deception and are not practicing it.

11. That at Boston "a strenuous effort was made to get rid of the Editor, and that so great has become the dissatisfaction with his administration that this endeavor might have been successful had the general body any voice in the management of the Association."

This statement is unqualifiedly false, as all who attended the Boston session well know. There was an opposition, it is true, and a bitter one, but it was limited to the horde of nostrum vendors who have been getting rich by humbugging and deceiving our profession, and to the owners or attachés of those medical journals nourished by the same brood, who allow themselves to be used as the mouthpieces and tools of proprietary interests. The Editor of THE JOURNAL of the American Medical Association knows full well that he is hated with a most intense hatred by these gentlemen and their allies, and that they would stop at nothing to secure his "dismissal," but he also knows, and knows thoroughly and well, that the "management" was fully and completely endorsed by 95 per cent. of the physicians at the Boston session, and, for that matter, is endorsed by a like proportion of the physicians of the country, who know the truth of what is going on.

So much for the "facts" regarding the American Medical Association as set forth by the editor of the *Record*. Just a word as to that gentleman himself. He graduated in the spring of 1877 and so has been a member of the medical profession for 29 years. During all this time, his interest in the American Medical Association and in medical organization was so great and his enthusiasm so uncontrollable that in March, 1906, just ten weeks before the Boston session, he became a member of the American Medical Association. Truly, not without reason has the zeal of the new convert become proverbial. Had he devoted a small part of the 29 years of his professional life to a more careful study of the organization of which he was, at last, to become a member, he might have been able to discuss the Association's affairs intelligently, if not truthfully. During all this time, men whose membership in the organization numbers years while his numbers weeks were earnestly and unselfishly striving, not only to build up the American Medical Association, but to bring about better conditions in our profession. During the same time, what has the editor of the *Medical Record* done in this respect? Yet he now arrogates to himself the right to criticise and, by implication and by baseless insinuations to brand these same men as "boodlers" and "grafters."

Is it probable that the business interests of an old and hitherto reputable publishing house will be enhanced by the use of its journal as a medium for such malicious, unfounded and unwarranted attacks? We think not. However, we commend this thought to the consideration of William Wood & Co. of New York.

TREATMENT OF TYPHOID FEVER.

A brief review of the opinions expressed with regard to the treatment of typhoid fever at the recent meeting of the British Medical Association will have special value at this season, not only because the subject is always a live one, but because of the different points of view of our British colleagues. There is little difference of opinion to be reported, but many of the ideas expressed in the discussion deserve notice because of their practical character. Two phases of the treatment of typhoid fever received special attention, and these may well be called the eternal questions in typhoid fever, the problem of removing harmful infectious material from the intestines, and that other ever-recurrent question, What shall the typhoid-fever patient be fed?

The declaration that the bowels of typhoid-fever patients should be kept rather loose, so as to prevent the retention of large numbers of bacilli in the intestinal tract and the consequent absorption of large amounts of the toxic material excreted by these bacilli, was not received with favor. It was pointed out both by our English and Canadian confrères that typhoid patients who are somewhat inclined to be constipated do better than those whose bowels are loose. A distinguished English authority said that the only cases of typhoid fever in his practice about which he became anxious were the sufferers from diarrhea. These patients fall victims to intestinal hemorrhage and perforation much more frequently than those who are constipated. In a large number of cases the mortality among those who had diarrhea was more than twice as great as among those who were more or less constipated.

It was further pointed out that the presence of the bacilli is evidently not a matter to be feared. Patients recover from typhoid fever, gain rapidly in weight and apparently enjoy the best of health, yet continue to excrete typhoid bacilli for many months. It must not be forgotten that these bacilli can be found in the urine of patients often for three months and sometimes for much longer, yet there is no bad effect from them, except the possibility of infection to others, and the patient is sometimes actually in better health than before the attack. The effort of the physician, then, who wishes to help Nature in the struggle with the disease must be not merely to encourage the removal of as many bacilli as possible, but to help Nature with the production of that immunity to the typhoid bacilli which eventually occurs in all persons who recover. The few bacilli that might be removed from the intestinal tract by means of purgatives are as nothing compared to the many millions of those organisms that continue to pass from the system after the patient has become thoroughly convalescent.

The rational treatment of typhoid fever, then, consists in the promotion of immunity. There are no direct means for this, but indirectly the best remedial measure is evidently to preserve the patient's strength as much as possible in order to encourage a healthy reaction. In securing this object the question of how typhoid-fever patients must be fed becomes important. There is practically universal agreement now that an exclusive milk diet—except for patients who are very fond of milk and who can take large quantities of it without disturbance—is a mistake. During the first week of typhoid fever, patients rarely crave any food, and only small amounts should be given. As soon as they begin to develop an appetite, however, additions should be made to their diet, and the extent of these additions was the special subject of discussion. Several, even of the most conservative, of British physicians declared that they considered it advisable to give a patient almost anything he asked for. This is, of course, to be followed only as far as the more nutritious classes of foods are considered. All kinds of fruit juices are to be permitted, though the greatest care must be exercised in the removal from them of seedy particles or anything else that, failing to be digested, might prove irritant to the typhoid ulcers. Some would allow all kinds of meat if asked for, provided the meat was given in a very fine state of division.

It was agreed that it is very difficult to decide just what is the meaning of solid food. Milk unmixed with barley water or with arrowroot will often, in the words of Sir Thomas Barlow, be found in the intestine in large craggy masses which certainly must prove a serious cause of irritation to the typhoid ulcers. On the other hand, finely minced meat will become thoroughly fluid under normal conditions of digestion. In normal circumstances only indigestible food remains in solid condition as low down as the terminal portion of the ileum. It would seem advisable, then, to feed patients much more liberally both as regards quantity and variety than has been hitherto the custom, first in order to shorten the stay in the hospital, an important consideration for workingmen, and, second, in order to prevent the occurrence of the sequelæ of typhoid fever, such as abscesses of various kinds and thromboses, which were shown by statistics to be much more frequent after typhoid fever treated with an exclusive milk diet than when treated with a more generous and varied diet.

THE PHARMACOLOGY OF "SOMNOS."

About a year ago "Somnos," a proprietary preparation put out by the H. K. Mulford Company, was taken up by the Council on Pharmacy and Chemistry. Preliminary examination showed that it was a preparation of chloral, probably a solution of a weak compound of chloral and glycerin. The advertising literature sent out by the H. K. Mulford Company was worded in such a way as to hide from physicians the real nature of the preparation, but, instead, stress was laid on the claim that it was free from chloral. The attention of the officers of the company was called to the matter, and it was

hoped that they would submit a plain statement regarding the composition of the preparation and modify the literature to conform with the actual facts. This they did not seem inclined to do, at least they did not do it.

The Council having become satisfied regarding the actual composition of Somnos, a subcommittee was asked to investigate its physiologic action and to compare this with that of chloral so that the claims made by the manufacturers regarding its therapeutic action might be verified or disproved. These investigations were conducted last April and May, and the report has been ready since that time, but has been withheld, awaiting the action of the H. K. Mulford Company. By reference to THE JOURNAL, two weeks ago,[1] it will be seen that the H. K. Mulford Company, in a roundabout way, has acknowledged that Somnos is a combination of chloral and glycerin, but it still persists in claiming that "the product is safer than any known hypnotic, that it produces normal sleep, is less depressing than the bromids and absolutely without any untoward effect on the heart, respiration and vasomotor centers or the blood."

For the reason that the old claims regarding the therapeutic action and safety of Somnos were persisted in, the report of its pharmacology was ordered published. It will be found in this issue.[2] This report may not make interesting reading to the average physician, since it is more or less technical. Nevertheless, it is to be hoped that physicians have become sufficiently interested in the great question which is affected by this report to get at least the sum and substance of it. Condensed into a few words, the experiments show conclusively that the combination of chloral and glycerin, put out by the H. K. Mulford Company as "Somnos," is practically identical in its physiologic action with a solution of hydrate of chloral containing a similar quantity of the drug, that it is fatal in the same relative doses, and that the company has made claims for its preparation which, look at the matter as we may, are extravagant in the extreme.

It is to be regretted that a reputable pharmaceutical house such as the H. K. Mulford Company should have stooped to such practices. To say the least, it has not been honest and square in this matter. It has made claims for its preparation as a therapeutic agent that would be considered fraudulent in the extreme were they made regarding a "patent medicine."

While criticising the H. K. Mulford Company, however, we regret to say that it is not the only firm of standing that has been guilty of such practices, as may be shown hereafter. There are many preparations manufactured and sold by pharmaceutical houses of standing which are exploited under false claims, either as regards their composition or their therapeutic action, or both. It is to be hoped that the Council will not be obliged to make public the actual facts regarding these preparations, but that the manufacturers themselves will conclude to be honest and square with our profession and state the facts themselves, or withdraw the articles from the market.

The object of the Council is to bring about better conditions for the future, not to punish for past misdeeds.

1. THE JOURNAL, September 1, page 695.
2. See page 872.

PHYSICAL BASIS OF LIGHTNING DREAD.

The mortality statistics of the last five years show that the average annual number of deaths from lightning was more than 200. The report of these sad accidents is read with terror, yet with avidity, by many persons who have an inordinate dread of lightning, and the consequence is an increase of their lightning phobia, so that toward the end of the summer a thunder storm becomes a source of positive dismay. It is usually considered that such persons have an unreasoning dread of lightning, but an analysis of cases soon shows that most of them are sensible persons under ordinary conditions, though they lose all their confidence in themselves almost at the first sign of a lightning storm.

There is no doubt now in the minds of those who have studied a number of those cases closely that the dread of lightning is a true phobia, though there is in it very probably much more of a physical basis than there is for the most of the unreasoning dreads which are called phobias. While the sufferers from mysophobia, the fear of dirt, which makes people wash their hands dozens of times a day, have the excuse that it is because they dread the presence of microbes that they wash so frequently, it is well known that such cases occurred long before the present state of acute attention to microbes so characteristic of our day developed. There is here simply an imperative idea that they must not let themselves be contaminated by dirt, an idea from which they can not get away. Most of the other phobias are of the same distinctly psychic character and can be overcome only by suggestion, though, as a rule, the amelioration of the person's health brings about an improvement in the annoying symptoms. In all of these cases there is a distinct condition of what used to be called neurasthenia, though in recent years there has come to be a very general realization that, owing to the preponderance of the mental element in these cases, the term psychasthenia or phrenasthenia is much more expressively descriptive.

It seems clear, however, that there is something in the physical condition of the elements just before and during a thunderstorm which affects certain people very unfavorably. It has been suggested that the disturbance of the ether which causes telegraphic instruments to be less easily used than before and which so seriously disturbs long-distance telephone lines may have its effect also on the brain neurons. That the neurons may affect and also be affected by vibrations in the ether is well recog-

nized. When as president of the British Association for the Advancement of Science some years ago Sir William Crookes took "Telepathy" for the subject of his address, he suggested as the only possible explanation for certain well-recognized phenomena of the communication of minds at a distance from one another, the traveling of impulses from one set of neurons through the circumambient ether to the other set. Only such minds can thus communicate as have the same moment of vibration, just as only such wireless telegraphic stations can communicate with each other as have their sending and receiving instruments properly attuned to each other.

It would seem that the minds of persons who suffer from a great fear of lightning become primarily affected by the magnetic disturbance in the ether which sympathetically is communicated to their neurons. In spite of every reasoning, then, a panicky condition develops to a great extent beyond the control of the will. Under these circumstances reassurance is given to such persons by a straightforward explanation of the reason for their phobia in the physical affection which exists in the underlying basis of mental operations. This proves a very valuable suggestion of therapeutic value even in the worst cases. In some individuals it becomes almost curative in effect, even though the physical dread of lightning does not disappear. It has been suggested that this method of mental therapeutics would save a great deal of suffering in many cases.

NEW AND NON-OFFICIAL REMEDIES.

The first installment of the list of proprietary articles approved by the Council on Pharmacy and Chemistry appears in this issue. It is expected that an installment will appear each week for some months, or until all the articles that have been approved shall have been announced. It is understood that this publication in THE JOURNAL is preliminary to the publication in book form. It will be noticed that the Council asks for suggestions and criticisms, especially from physicians. The object is to supply our profession with reliable information regarding proprietary medicines, and in such a way that it will be a help to physicians in deciding not only whether or not a preparation is worthy of confidence, but also to aid them in judging of its therapeutic value. Hence, if our readers feel that the matter can be put in a form more useful to them, they should submit their views to the secretary of the Council. It is now over a year and a half since the Council was organized; some may wonder why so long a time has been necessary before the profession could have the benefit of its deliberations. Those who realize the actual conditions that faced the Council at the beginning, the important problems to be solved, the immense amount of work inseparable from an undertaking of this magnitude, will not wonder that so much time has passed before actual work, as far as the approved preparations are concerned, is made public. Further, the Council has realized that any false step might cause criticism and bring about a failure at the very outset; consequently, extraordinary care has been observed so that no steps should be taken that might have to be retraced.

THE WEST VIRGINIA MEDICAL JOURNAL.

The most recent addition to the state journals is the *West Virginia Medical Journal*, which, with its August number "with its very best bow, steps modestly into the charmed circle of state medical society journalism, and hopes for a warm welcome." There is little fear that it will be disappointed, as it covers a territory in which a clean, ably edited and aggressive state journal is greatly needed. The first number, carefully edited and well printed, appears in magazine form, 7 x 9¾, with fifty pages of reading matter mainly devoted to papers read at the last annual meeting of the state association, together with the minutes of the House of Delegates and news from county societies. The number also contains a complete alphabetical list of the members of the state association. The new journal is in the hands of a committee on publication, consisting of Drs. S. L. Jepson, L. D. Wilson and John L. Dickey, all of Wheeling, and is printed in Wheeling. We feel sure that the members of the West Virginia State Medical Association will appreciate the great benefit to be derived from this new journal, and will assist those in immediate charge in making it a power for good and a credit to the profession of West Virginia.

TASTES OF MOSQUITOES.

It has often been noted that mosquitoes seem to have special likes and dislikes and that some persons are much more annoyed by them than others. Now that the question of disease conveyance has become a more important consideration than the annoyance, the reasons for this special liking for individuals are being carefully studied by a number of observers. A summary of these observations and an account of a series of recent experiments have been made by Professor Galli-Valerio,[1] director of the Institute for Experimental Hygiene and Parasitology at the University of Lausanne in Switzerland. He has found that the color of the clothes worn by the individual has most to do with the supposed preferences of the mosquito. His experiments were conducted with various forms of anopheles. Nearly four times as many of these mosquitoes lighted on dark-colored clothes in a given time as on light colors. This shows that the chances of the number of mosquito bites may be greatly reduced by choosing light colors for clothing, though this is not sufficient to afford complete protection. It is thought that this is about as effective as tobacco smoke in securing immunity from the insect stings. This is so simple that as an additional precaution when in malarial countries it can be put into effect by all, and, as everything that helps to ward off malaria is of value, non-immunes going into malarial districts should be advised of it by their physicians. It is

1. Daily Consular and Trade Reports, Sept. 5, 1906, issued by the United States Dept. of Commerce and Labor.

particularly the casual traveler in the tropics who is not likely to provide himself with the very light-colored clothing so commonly worn by the inhabitants, yet it is he who, most of all, needs the added protection against mosquito bites which is said to be thus afforded.

THE CAUSE OF DEATH.

Physicians should appreciate the necessity of designating correctly the cause of death. Science is in no way served when the cause of death, for instance, is entered on the certificate simply as "convulsions," or "heart failure," or "pulmonary edema." The patient may have died immediately or directly in such circumstance, but these unqualified statements give no clue to the disease which was the essential, indirect or underlying cause. In later years relatives are often anxious when they themselves become ill; then, again, it will be found that questions of heredity in disease, very important to be settled, must forever remain obscure. From the legal viewpoint the matter is still more grave. A defective certificate may occasion the patient's family much vexation and at the same time give the authorities unnecessary work in the way of investigation. Occasionally there may be mortification for the physician not altogether undeserved. For example, to designate a death as due simply to meningitis, peritonitis or gastro-enteritis, without qualification, may not satisfy the coroner or medical examiner. The further statement will be necessary whether the disease was idiopathic or the result of a fall, a wound, a "criminal operation" or a poisoning. Here is an example of a death certificate correctly made out, which nevertheless became a "coroner's case:" "Asthenia de senectute; contributing cause, fracture at the neck of the femur." The fracture was probably sustained in falling out of bed or by slipping on the street, as is usual in such cases. But some one may have pushed or struck the deceased, becoming thus more or less responsible for the death. In any event, whenever an accident has contributed to a death, no matter how remotely, the case is one for investigation. In most communities a letter from a reputable and responsible physician to the authorities, accompanying such death certificates, will obviate official action and spare the family annoyance.

Medical News

ILLINOIS.

Chicago.

Committed to Dunning.—Dr. Christian R. Hartung was examined in the insane court September 6 and committed to the Cook County Hospital for the Insane, Dunning.

Hospital Dedicated.—St. Vincent's Hospital, Taylorville, was dedicated August 22 with appropriate ceremonies. The hospital was erected at a cost of about $25,000 and will be in charge of the Sisters of the Most Precious Blood.

Coroner's Record for August.—The coroner of Cook County reports for August a larger death roll than any month since the Iroquois Theater fire. The table of deaths from other than natural causes during the month was as follows: Suicide, 39; drowning, 29; heat prostration, 27; railroad accidents, 26; homicide, 14; street car accidents, 13; lightning, 1, and scenic railway accident, 1.

Warning Against Diphtheria.—The commissioner of health has issued a warning to parents and teachers of children of the public schools to pay particular attention to sore throats of children, no matter if they seem to be of minor character. The opening of the schools and the consequent exposure of more than 250,000 children to unsuspected cases of diphtheria are a most important factor in the increase of the disease.

Personal.—The king of Portugal has conferred on Dr. Alexander Hugh Ferguson a commandership in the Order of Christ of Portugal in recognition of his original work in surgery.——Dr. Clinton G. Lumley, who was operated on for appendicitis August 28, is making good progress toward recovery.——Dr. and Mrs. Bernard Fantus have returned from Europe.——Dr. Henry W. Cheney and wife have returned after an eight months' absence in Europe.

Tent Sanatorium Opened.—The tent sanatorium under the auspices of the Chicago Tuberculosis Institute was opened September 3, with three portable cottages, one of which is used for a dormitory, one for a dispensary and one for a kitchen. Ten of the 20 patients for which the sanatorium has accommodations at present were already on hand at the opening day, and several other applications are being considered. The initial outlay has been about $1,500 and it is expected that the expense to maintain each patient will be about $5 per week.

Mortality Report.—The mortality for the week ended September 8 was 515, or 46 less than for the preceding week and 15 more than for the corresponding week of 1905. This is equivalent to an annual mortality rate of 13.10 per 1,000. Of children under one year of age, 127 died, and 83 over 60 years of age. Acute intestinal diseases led the death list with 113, followed by violence, including suicide, with 52; consumption with 49; heart disease with 49; Bright's disease with 47; pneumonia with 29, and cancer with 19. During the week 10 deaths from diphtheria and 10 from typhoid fever were reported.

INDIANA.

New Sanitarium.—Dr. John Little Morris is building a 75-room sanitarium and hospital at Columbus, with modern equipment, especially for the care of non-surgical, chronic diseases.

Typhoid Fever.—A great deal of typhoid fever is reported from Huntington County. The disease seems to affect chiefly the southern parts of Union and Rock Creek townships.——From Mitchell are reported 63 cases of typhoid, with 3 deaths.

Smallpox.—Reports to the secretary of the State Board of Health show the prevalence in a mild form of smallpox in Starke, Marshall, Fulton and Pulaski counties. During the last three weeks there have been more than 20 cases of the disease, all of a mild type.

Personal.—Dr. D. F. Davis, New Albany, has returned from Europe.——Dr. Edward N. Flynn has been elected mayor of Jeffersonville.——Dr. E. J. Schott, Terre Haute, was thrown from his carriage in a runaway accident and strained his back.——Dr. Chester C. Funk has been elected secretary of the New Albany board of health.

MARYLAND.

Baltimore.

Deaths from Violence.—During August 63 deaths from violence were reported, 11 of which were due to suicide.

Personal.—Dr. John W. Hawkins, Towson, has gone to Charles County, lower Maryland, for a visit.——Assistant Surgeon Benjamin H. Dorsey, U. S. N., is visiting his home at Ellicott City.

Vital Statistics.—During the week ended September 1, 145 deaths were reported. This is equivalent to an annual death rate per 1,000 of 13.05; for whites alone, 12.06, and for blacks alone, 18.32. Typhoid fever is on the increase.

State Society to Meet.—The semiannual meeting of the Medical and Chirurgical Faculty of Maryland will be held in the famous old Senate Chamber at Annapolis, where George Washington resigned his commission, on September 27 and 28. The address of welcome will be delivered by Governor Warfield.

New Hospitals.—The offer of the widow of Dr. Frank to give $75,000 to the Hebrew Hospital has been accepted. The building will be named "Doctor Samuel Leon Frank Memorial Hospital" and will be located on the grounds of the present institution. It will be the principal hospital and the present building will be used for incurables and nurses.——Dr. Harry

Adler has been elected to succeed the late Dr. Frank as president of the Hebrew Hospital and Asylum.——Dr. Frank G. Moyer will erect a sanitarium on the site of his present residence.

To and from Europe.—Dr. Hiram Woods, president of the Medical and Chirurgical Faculty of Maryland, and Dr. Robert Hoffmann have returned from Europe.——Dr. Roland B. Whitridge is spending September in Switzerland.——Dr. W. Hewson Baltzell is at Aix-les-Bains.——Dr. Lewis C. Lehr is at Schwalbach, Germany.——Dr. J. Hall Pleasants, who has been ill with typhoid fever in Europe, has returned to Baltimore.

MASSACHUSETTS.

Pay for Medical Examiners.—The board of health of Chicopee has voted to ask the Chicopee board of aldermen for $1,000 to defray the expenses of the proposed medical examination of school children and inspection of schools.

Physician Wins Suit.—Dr. Lyman A. Jones, North Adams, has won his suit against the city for $750, alleged to be due for extra work done during the smallpox epidemic of 1904, when Dr. Jones was physician of the board of health.

Personal.—Dr. Frederick G. Smith of Somerville has returned from Europe.——Dr. Frank L. Morse, for several years city bacteriologist, has been appointed city physician of Somerville to fill the vacancy caused by the death of Dr. Alvah B. Dearborn.

Typhoid Fever.—A serious epidemic of typhoid fever has developed at Lynn. During the last two weeks 24 cases were reported. The cases are not confined to any one portion of the city, but are scattered. It is feared that the water supply is polluted.——Springfield reports 18 cases of typhoid fever. They have developed within the last two weeks.——A number of cases are reported from Middle Farms.

New Nurses' Home.—The South Framingham Hospital and Training School has been given a new nurses' home by Messrs. Frank A. and Henry B. Day, West Newton, as a memorial to their parents. The hospital expects to secure the services of a woman physician as superintendent in place of Miss Annabel L. Stewart, who has been for nearly 12 years head of the institution and who has resigned, to take effect next month.

NEW YORK.

New York City.

St. John's Guild.—On account of the very heavy call for its services, the floating and seaside hospitals will remain open as long as funds are provided.

School for Cripples.—A school for cripples is to be built at a cost of $75,000. It will be five stories high, will have a roof garden and will be situated on Water Street.

Coney Island Hospitals.—Seaside Home, Brooklyn Children's Aid Society and the Health Home of the New York Children's Aid Society remain open. The Sea Breeze Home will be kept open until October 1.

Bellevue Doctors Robbed.—There are about 50 doctors at Bellevue Hospital and nearly all suffered from looting of their dormitories, which occurred September 4. The thieves made away with all accessible jewelry, clothing and money.

Infant Death Rate Higher.—There were 312 deaths among babies in the past week, against 233 for the corresponding week of last year, all dying of summer complaint. The infant mortality, as a rule, falls at this time of the year.

Home from Europe.—Dr. Warren S. Adams arrived from Liverpool on the *Oceanic*, September 6.—— Dr. J. Waldron Bartlett arrived from Europe on the *Caronia*, September 5.—— Dr. and Mrs. Hugh H. Young arrived on the *Oceanic*, September 5.

Child Scalded in Hospital.—On September 2 a child died from scalds received while taking a bath in the Randall's Island Hospital. Coroner Harburg, after a thorough investigation, found the occurrence due to neglect and carelessness on the part of the nurse who, in consequence, was discharged.

Patients at Pasteur Institute.—An unusually large number of patients have been admitted to this institution recently, and the arrival of six in one day has caused Dr. William L. Wheeler, director of the institute, strongly to urge the shooting of all dogs suspected of being mad. He suggests shooting them through the heart so that the brains may be available for examination.

Health Department Busy.—The rules of the board of education in regard to the admittance of pupils into the public schools make this a busy season for the board of health. Much of this work is the result of neglect on the part of physicians to report births. The force can dispose of about 600 such cases a day, and in addition, some 700 or 800 vaccinations are made daily.

Death Rate Among Tunnel Workers.—The officials of the Pennsylvania Railroad Company have issued a general statement to the effect that the lives and health of its workmen are not needlessly sacrificed in the construction of the tunnels under the East and North rivers. It has been stated that the death rate is no higher than obtains among men who build steel frame skyscrapers, and where accidents have occurred, they have been due, as a rule, to a disregard of the rules and precautions laid down by the company.

Buffalo.

Personal.—Dr. Eugene Smith has returned after a four months' trip abroad.——Dr. Alvin A. Hubbell is taking a trip on the Great Lakes.——Drs. Hubert U. Williams and F. Park Lewis and family have returned from abroad.

Medical Department to Open.—The Medical Department of the University of Buffalo will open for its sixty-first annual session September 24, and continue for 34 weeks. The opening address will be delivered by Dr. James E. King.

NEBRASKA.

Personal.—Dr. A. D. Wilkinson, secretary of the Nebraska State Medical Association, leaves on September 21 for a year's trip abroad. He expects to visit Japan, China, the Philippines and Siam and to return by the way of Europe. Dr. W. H. Orr, Lincoln, will act as secretary during Dr. Wilkinson's absence.

New President of State Association.—The Council of the Nebraska State Medical Association has elected Dr. F. A. Long of Madison to serve as president of the State Association in place of Dr. J. L. Green, who resigned to take the position as superintendent of the Illinois Eastern Hospital for the Insane, Kankakee, Ill.

PENNSYLVANIA.

Much Typhoid Fever.—According to the bureau of health of Pittsburg, typhoid fever is increasing in and around that city. Two thousand four hundred and ninety-one cases have been reported during the first six months of the year, as against 858 cases for the same period last year.——On account of the prevalence of typhoid fever at Hamburg, the opening of the public schools will be postponed until September 10. It has been discovered by the authorities that the infection was present in the drinking water. In 50 per cent. of the cases reported the water used came from a well found contaminated. One hundred cases are reported in the town.——In Phoenixville 40 cases have been reported in the past three months, many having resulted fatally. A state medical inspector detailed by Dr. Warren to investigate the sanitary condition of the town, reported things in an extremely bad condition, and the local board of health claims it is powerless in the matter of checking the disease without the coöperation of the town council. Dr. Dixon has notified the authorities to take immediate action to stamp out the disease.

Philadelphia.

Personal.—Dr. Thomas F. Neil has been appointed superintendent of the county insane asylum of Blair County, Pa.—— Dr. J. Malcolm Henry has returned home from a tour through Canada.

Hospital Report.—The report of the Medico-Chirurgical Hospital for August shows 5,489 patients treated; 1,510 of these were surgical. The accident ward received 913 cases. Electric treatment was administered to 196 persons and the *x*-ray was used on 168.

Improvements for Hospital.—Plans have been completed for the remodeling of the Willberham mansion, which was purchased for the purpose of increasing the facilities of the Frankford Hospital. The first and second floors of the building will contain two general wards, nurses' room and a diet kitchen. The third and fourth floors will be children's wards and private rooms. The building will be four stories high and will measure 114 by 62 feet.

War on Impure Candy.—The arrests of 19 retail candy dealers in this city by state dairy and food comissioner, Dr. Warren, resulted in the conviction of the men. The fine in each case was $57.50, making a total of $1,092.50. The fines were paid by the New York Glucose Company, known as the glucose trust. The successful crusade conducted by Dr. War-

ren against the manufacturers of impure candy is considered complete, and it is now stated that he will start a campaign against other impure food concerns in the state.

SOUTH CAROLINA.

Editorial Staff Named.—The editorial staff of the *Journal of the South Carolina Medical Association* is made up as follows: Editor, Dr. J. Williamson Jervey, Greenville; associate editor, Dr. Walter Cheyne, Sumter, and managing editor, Dr. Curran B. Earle, Greenville.

State Society Meets.—At the annual meeting of the South Carolina Medical Association, Dr. T. Prioleau Whaley, Charleston, for 10 years its secretary, was elected president; Dr. Walter Cheyne, Sumter, was elected secretary, and Dr. Charles P. Aimar, Charleston, was re-elected treasurer.

College Changes.—Dr. Louis D. Barbot has been elected professor of anatomy in the Medical College of the State of South Carolina, vice Dr. Francis L. Parker, resigned.——Dr. Edward F. Parker has been elected dean of the Medical College of South Carolina, succeeding his father, Dr. Francis L. Parker, who has resigned.

New Hospitals.—The Hospital Association of Anderson County at its annual meeting announced that nearly $4,000 had been raised for a hospital. The site has been purchased and the work of actual construction is expected to be started soon.——The Florence Infirmary, established by Dr. F. H. McLeod and N. W. Hicks, has been opened to receive patients.

Resigns After Long Service.—After 41 years of devoted services to the Medical College of South Carolina, Charleston, Dr. Francis L. Parker has resigned as dean and professor of anatomy. The faculty and the board of trustees have adopted resolutions which set forth the splendid services done by Dr. Parker for his alma mater, and appropriate expressions of the appreciation they have for his services and their sincere regret at his resignation.

Scholarships.—The governor has announced the names of the following men to whom he has awarded scholarships in the Medical College of the State of South Carolina: First district, F. H. Marvin, Summerton; second district, L. S. Hay, Allendale; third district, F. M. Routh, Anderson; fourth district, W. T. Brockman, Greer; fifth district, B. L. Robertson, Lancaster; sixth district, J. K. Stealvey, Socastee, and seventh district, C. C. Owens, Columbia.

SOUTH DAKOTA.

First Conviction Under New Medical Law.—The first arrest under the new medical law has resulted in a conviction. A. H. Bruning, a "chiropractic," was arrested on complaint of the secretary of the State Board of Medical Examiners, on the charge of practicing medicine without a license. He was tried and found guilty, August 16. A nominal fine of $50 and costs was imposed and the case will be appealed, as it is desired to secure a final ruling.

Slaughter House Regulations.—The State Board of Health has sent out circulars to the county superintendents of health, requesting that they visit and inspect the slaughter houses in their respective counties and require the observation of the following regulations: 1. A plentiful and uncontaminated water supply. 2. Proper and adequate drainage for both the slaughter houses and premises. 3. A thorough cleansing of slaughter houses and premises from manures and offal after each butchering. 4. Each slaughter house should have water-tight floors, which should be washed after each butchering, ample subdrainage and clean, whitewashed or painted walls.

UTAH.

Fee Bill Adopted.—At the August meeting of the Utah County Medical Society, held in Provo, the medical fee bill was revised and adopted.

Personal.—Dr. Walter M. Stookey and family, Lehi, expect to sail for Europe, October 10.——Dr. Samuel C. Baldwin, Salt Lake City, returned August 28 after a five months' tour of Europe.

Health Commissioner Was Arrested.—Dr. M. R. Stuart, health commissioner of Salt Lake City, was arrested August 5 for creating a nuisance by causing garbage, swill, etc., to be dumped into Horseshoe Bend. He admitted the responsibility, but plead not guilty to dumping this garbage, and the case was tried. The jury disagreed.

Typhoid Fever.—Waterloo, just outside the city limits of Salt Lake, is reported to have a serious epidemic of typhoid fever. The county physician has been empowered to investigate the source of the infection of the typhoid cases, to have the milk supply of that section analyzed and the outbuildings inspected, and has ordered a general cleaning-up of that part of the city.

VIRGINIA.

Hospital Opening.—Abingdon Hospital was formally opened August 27, and the next day the patients were received.

Smallpox.—The board of health of Lancaster County has reported 18 cases of smallpox at Churchfield, near Irvington, and one case at Whitestone, only a few miles away. Quarantine has been established. The disease is mild in character and is confined to the colored population.

Personal.—Dr. Charles W. Rodgers, Staunton, while returning from a professional visit, had a narrow escape from drowning, saving himself and his horse, but losing his buggy.——Dr. A. Chambers Ray, Eagle Lake, has been appointed physician to the Randolph-Macon College, vice Dr. William S. Ellis deceased.

WASHINGTON.

New Sanitarium.—The Northwestern Sanitarium Association, at Port Townsend, has been incorporated with a capital stock of $50,000.

Personal.—Dr. Grant Calhoun has been appointed health officer of Seattle, vice Dr. William L. Ludlow.——Dr. R. B. Cassil, Walla Walla, has returned from a trip to Alaska.

Will Yield to Decision of Experts.—The King County Medical Society, which made a strong protest against the attempt of the Chicago, Milwaukee & St. Paul Railway to extend its road through the Cedar River water-shed, has withdrawn its objection, on account of the opinion of sanitary experts that the watershed could be crossed without pollution to the water supply of the city.

WISCONSIN.

Leaves Large Estate.—The will of the late Dr. John A. Rice, Merton, has been filed for probate, the testator leaving about $100,000 in personal property and nothing in real estate.

Personal.—Dr. Henry W. Morgenroth, Berlin, who was operated on for appendicitis at St. Mary's Hospital, Oshkosh, August 14, is reported to be making an uneventful recovery.——Dr. Thomas S. Clark, Knowlton, has been committed to the State Hospital, Oshkosh.——Dr. O'Leary, Husher, sailed for Europe, August 30.

Physical Examination of School Children.—The Milwaukee Medical Society is making preparation for the inauguration of physical examination of school children. The expense of the experiment will be borne by the society, and Drs. Arthur J. Patek, Arthur W. Akerly and George P. Barth have been appointed a committee and placed in charge of the work.

GENERAL.

Hospital Cars.—It is reported that the Pennsylvania and the Baltimore & Ohio railroads are about to have hospital cars built to care for the injured in the railroad wrecks. The Erie is said to be the only eastern railroad at present possessing such cars.

Copies of The Journal Wanted.—We are in need of the issues of THE JOURNAL of July 7 and 14, 1906, so that orders for back numbers may be filled. If any of our readers will return these numbers we will remit ten cents for each copy or will send in exchange any other numbers desired.

A Fraudulent Agent.—Dr. Franklin H. Martin, Chicago, asks us to warn physicians against one G. E. Simpson, who is fraudulently taking orders for *Surgery, Gynecology and Obstetrics*. He says that many physicians have already been victimized by this man by paying him in cash or giving him checks payable to his own order; and this notice is published in the interest of the profession and to stop his further operations.

Pathologists and Other Physicians Wanted in Illinois Hospitals.—The Illinois Civil Service Commission will hold examinations very soon for a pathologist at Kankakee ($2,500 a year and maintenance), and pathologists in six other hospitals for the insane, paying from $75 to $125 per month and maintenance; also for physicians in the charitable institutions, not insane, and for assistant physicians in the hospitals for the insane. These positions pay from $75 to $150 a month. There will also be examinations for surgeons in the Soldiers' Orphans' Home at Quincy, positions which pay from $60 to $125 a month and maintenance. These positions are of great importance to the institutions of Illinois, and the commission is greatly interested in obtaining the very best talent for the examinations and in making them a success. Joseph C. Mason, secretary, Springfield, Ill., will send further information.

CANADA.

Winnipeg Hospital News.—The Winnipeg General Hospital treated 346 patients during the week ended September 1. Of this number 212 were men, 100 women ad 34 children.

Personal.—Dr. Charles Monod of Paris, France, is visiting his son, Dr. Ferdinand Monod of the Glengarry Hospital, Montreal.——Dr. Charles A. Ritchie, Winnipeg, Man., has gone to London, Edinburgh and Dublin to study.——Dr. Hamilton of Halifax is on her way to China to take a position in the hospital at Shanghai as a medical missionary.

Health Officers on Tour of Inspection.—Dr. Montizambert, director-general of public health, Ottawa, has been in British Columbia on a tour of inspection. Accompanied by the chief quarantine officer of British Columbia, Dr. Watt of the William Head quarantine station, he is visiting the Grosse Isle quarantine station and the leper hospital at Tracadie, N. B. They will return to British Columbia and choose a site for the new leper hospital in British Columbia.

Vaccination of School Children in Montreal.—No child is now allowed to attend school in Montreal unless able to show a certificate of successful vaccination. In certain new wards recently annexed to the city vaccination in the past few years has not been very rigidly enforced. In one of these out of a population of 600 pupils but 175 had been vaccinated. The Montreal medical health officer states, however, that there is now very little trouble in inducing parents to have their children vaccinated.

Analysis of Canned Meats.—A bulletin has just been issued from the laboratory of the Canadian inland revenue department dealing with the subject of canned meats. In all 322 samples were purchased in different sections of Canada and subjected to the same examination. Both canned meats from the United States and Canada were selected. The former were from dealers, but the latter were secured from dealers, wholesalers and also from the factories. Only four samples gave any evidence of decomposition, a proportion amounting to only 14 per cent. The preservatives sought for were salicylic, benzoic, sulphurous and boric acids, but the latter was the only one detected, and that in a percentage lower than required by the English parliamentary commission, namely, 0.5 per cent. A close inspection of the tabulated list of the analyses shows that as far as Chicago packing-houses were concerned in these products that two samples of one house showed "slight traces of boric acid" and "boric acid;" while two samples of another Chicago house showed "boric acid" and "meat badly decomposed."

FOREIGN.

Congress of Microbiology.—A three-day session of the newly founded Association for Microbiology—*Freie Vereinigung für Mikrobiologie*, was held at Berlin in June with a comparatively large and much interested attendance. The *Berliner* and the *Münchener med. Wochschr.* are publishing a simultaneous report of the proceedings. They represent the "last word" in bacteriologic, serotherapeutic and similar research among German scientists.

Retirement of Some Prominent German Professors.—It is rumored that von Leyden and Olshausen intend to retire from the medical faculty at Berlin University. E. v. Bergmann will also give up further teaching this fall when he passes his seventieth birthday, and W. Erb of Heidelberg will retire at the close of the winter semester. These men are all doing good work and do not feel their encroaching age, but they say they want to make room for the younger men.

To Combat Bovine Tuberculosis in Argentina.—The *Semana Medica* of Buenos Ayres states that the government has commissioned the director of the Bacteriologic Institute, don José Lignières, to go to Germany to study on the spot von Behring's method of treating tuberculosis in cattle. He is given leave of absence for five months, and the ministers from Argentina to France and Germany are ordered to facilitate his task, as special envoy from the government, by all the means in their power.

Demonstration Against Surgical Exhibition.—A foreign exchange states that an exhibition of Doyen's lantern slide, cinematographic representation of various operations, which he was giving, for some strange reason, before a lay audience, caused an uproar. The pictures representing an amputation of the arm and a trephining were accepted without protest by the general audience, but when Doyen proceeded to an abdominal operation the audience protested so clamorously against the reproduction that he was obliged to desist. Our exchange comments that such views are not adapted for the general public, however instructive they may be for medical men.

The Bottini Memorial.—A memorial tablet was recently unveiled at Pavia, Italy, to the memory of the late surgeon, E. Bottini. Behind the tablet were immured a gold medal with the portrait of the deceased and an elaborate souvenir volume containing works by his pupils and friends, with an address on parchment—all of which had been prepared to present to the master on the occasion of the twenty-fifth anniversary of his assuming the chair of surgery at Pavia. The plans for the ceremonies were annulled by the unexpected death of the great surgeon not long before the arrival of the anniversary. The tablet stands between one erected to the memory of Scarpa and another to Porta, and the inscription on the marble is merely a few words of tribute to the man "who by his genius in the science and the art renewed the glorious traditions of the Pavia school of surgery." Golgi is the dean of Pavia University, and Tansini is the present incumbent of the chair of surgery.

Visit of French Physicians to Germany.—A number of prominent French physicians and surgeons have recently taken a trip to Germany, with their ladies, and visited the scientific institutions in some of the larger cities. At Marburg, von Behring regaled the party with an account of his latest researches on tuberculosis, especially with a description of his tulase, a clear fluid containing somatic substance of the tubercle bacilli, obtained by treatment with chloral. It is used for active immunization or Mithridatization, as he calls it, and his extensive experience with sheep has been very encouraging. In the clinic it has to date been given subcutaneously, but it is given by the mouth to sheep, and this will probably prove the preferable route. Until the clinical value of this new Mithridatic remedy has been thoroughly established, he said, it will not be obtainable except in free samples for clinical research. Already favorable reports are being constantly received. He spoke rather discouragingly of the possibility of an effectual serotherapy for tuberculosis. Active immunization will probably be required, possibly combined with a serum. The trip generally proved so delightful and instructive, and the cordiality of the reception on the part of the physicians and surgeons of Berlin and elsewhere opened up such pleasant vistas of future trips of the kind, that, on Kutner's suggestion, an international committee for medical study trips was organized while the party was at Berlin. The committee appointed consists of Kossmann of Berlin as chairman, Bazot of Paris, Guyot of Geneva, Kutner of Berlin, Lifrange of Bertrix in Belgium, and Pini of Bologna.

LONDON LETTER.

(From Our Regular Correspondent.)

LONDON, Aug. 24, 1906.

Typhoid Fever in India.

Lord Kitchener has presided over the first meeting of a committee on typhoid fever, which was held at Simla. He stated that he thought it necessary to form the standing committee to advise as to efforts to reduce typhoid fever among the troops and to coördinate in the work of the whole medical profession in this direction. The ravages of cholera were worse in days gone by, but they are now, happily, a reminiscence. He has great hopes that the scourge of typhoid fever will eventually be brought under control. Young soldiers are most subject to the disease on arriving in the country. For some time experiments in antityphoid inoculation have been performed in India and great advances have been made on the system prevailing at the time of the South African war. The thoughtlessness of the soldier with regard to care of himself is a great difficulty. If inoculation is to be made more popular, he thought effort should be directed to make it less painful and unpleasant. He suggested an inquiry as to whether this could be accomplished by using a more diluted serum or distributing the dose over three or more injections, instead of two, as is the practice now, or reducing the amount of serum to be injected. Since the South African war the dose has been reduced considerably. If all discomfort could be avoided in the process an immune period of six months might be sufficient instead of two years, which is now aimed at. Then universal inoculation of the new arrivals might be looked for.

Phthisis in Calcutta.

In recent years the mortality from phthisis in the large towns of India has caused some anxiety to the authorities. In the absence of medical certification registration of the causes of death is imperfect, but such information as can be obtained points to a serious and increasing mortality from tuberculosis. In Calcutta, the matter has been specially in-

vestigated by the officers of the plague department. The results for 1905 have been published in a report to the municipality by Dr. F. T. Pearse. The population of Calcutta is 847,796—562,596 males and 285,200 females. The umber of Hindus is 551,462—361,176 males and 190,286 females; and of Mohommedans 249,939—174,117 males and 75,822 females. The report takes cognizance only of those two classes which constitute about three-fourths of the population of the city. The number of deaths due to phthisis in 1905 was 1,648 or 1.9 per 1,000. In England the rate is 1.3; in Bombay, 3.8; and in Indian gaols, 2.96. Thus in Calcutta the rate is high as compared with European figures, but low as compared with Indian. The age and sex incidence of the mortality is peculiar. The death rate for males is 1.4 and for females, 2.86. For Hindus, 1.8 and Mohammedans, 2.8; for Hindu males, 1.4 and females, 2.4; for Mohammedan males, 1.6 and females, 4.6. The excess of mortality among females, especially Mohammedan females, is striking. In England, on the contrary, the death rate of males from consumption is higher than that of females. The proportion of cases at early ages is also higher in Calcutta than in England. The excess of female mortality is attributed by Dr. Pearse to deficiency of fresh air. He finds that the proportion of cases is higher in huts than in houses. The average number of persons to a room is 2.41 in former and 1.72 in the latter.

The Antitoxin Treatment of Diphtheria.

The above report also shows that since 1889 the mortality rate of diphtheria has declined from 40.5 per cent. to 8.3 per cent. in 1905, when it reached its lowest point. How far this is due to the antitoxin treatment and how far to the more complete diagnosis of diphtheria by the aid of bacteriology may be debated. The declining mortality of tracheotomy cases, however, points to a marked influence of antitoxin. In the two years preceding the use of antitoxin the mortality was 66 and 70 per cent. respectively. In the next year, 1905, it was 50.2 per cent., and since then it has steadily declined to 27.6 per cent. in 1905.

The Proposed Union of the Medical Societies.

A meeting of the general committee of representatives of the medical societies in London has been held to consider the report of the organizing committee. Sir William Church presided. The first meeting of the members of the societies was held at the Royal College of Physicians, in 1905, for the purpose of promoting union. The report recommended that all male members of those societies which took part in the amalgamation should be permitted to join the new society on its formation as fellows or members without election, and that all female members of the societies should become members of the corresponding section or sections of the new society. It was recommended that the society should consist of the following sections which represented existing societies, but that the new society should have power to add new sections: 1. Anesthetic; 2. balneologic and climatologic; 3. clinical; 4. dermatologic; 5, diseases of children; 6. electrotherapeutic; 7. epidemicologic; 8. laryngologic; 9. life insurance; 10. medical; 11. neurologic; 12. obstetric and gynecologic; 13. odontologic; 14. ophthalmologic; 15. otologic; 16. pathologic; 17. surgical; 18. therapeutic. It is hoped that in the early future an anatomic and physiologic section and a section of preventive medicine will be formed. The Medico-Physiological Association and the Medico-Legal Society hope to join at some future date. It was recommended that each section should be self-governing so far as possible and should have direct representatives on the council of the society and on the editorial committee, but that expenditure should be subject to the control of the finance committee of the general council. The general management of the society would be under the control of a general council consisting of the president, the presidents of the various sections, two treasurers, two librarians, two secretaries, and 8 other fellows.

The Report of the Rotunda Hospital, Dublin.

The reports of this celebrated hospital are always looked forward to with interest by those interested in the progress of obstetrics. In the report for 1904-5, which has recently been issued, important structural additions are announced which will increase the accommodation by two large maternity wards and will supply ample isolation wards, a special room for the delivery of infective patients, and a disinfecting chamber. The maternity beds are of an antiquated pattern and date from a time when it was not uncommon to place two mothers with their babies in one bed. Their width precludes the possibility of placing cots between them and as a result the child has to be placed in bed with its mother. Many disadvantages follow: The infants are irregularly fed and occasionally suffer from infective enteritis, the result of the mother's dirty fingers or her pocket handkerchief being placed in the child's mouth. A more serious result is fatal overlying. A new form of bed has been introduced with a lever and rachet arrangement for elevating the head so as to ensure more efficient lochial drainage. The number of women delivered in the hospital has been steadily increasing and during the year exceeded that of any similar period since the foundation of the hospital. The number of admissions was 2,241 and of deliveries 1,904. As the result of better antisepsis and the more even distribution of the admissions, which prevented the overcrowding recorded in the last report, the morbidity has fallen from 10.7 to 6.7 per cent. and the number of deaths from 13 to 6. A most useful form of chart is employed for more readily recording morbidity and has been adopted by many other maternities. It consists of separate charts for temperature and pulse and is ruled with a deep line at 99° on the former and at 90° on the latter. Temperature and pulse must rise above these lines and remain above them for 3 consecutive morning and evening registrations, or in other words, for a period of 24 hours, before the case is recorded in the books as morbid. Thus the transitory and unimportant exacerbations of temperature and pulse which are not infrequently seen in cases which it would be misleading to term morbid are eliminated. Furthermore, the irregularities of pulse and temperature so frequently seen within 24 hours of delivery are not taken into account.

Doctors and Medical Emergencies.

The refusal of a physician to respond to an emergency call by persons who are not his patients often becomes a subject for criticism in coroners' courts. The following case is an example: A man poisoned himself by drinking oxalic acid. A physician who was summoned refused to go on the ground that the man was not his patient. The coroner, in summing up the evidence, raised the question as to whether the death of the diseased was accelerated by the absence of medical treatment and, if so, whether any one was to blame. He said that it is very difficult to say whether medical assistance would have been of any use or not. The opinion of the police surgeon was that it would not. The jury, however, could not overlook the fact that the first physician called, though told that the man had poisoned himself, refused to go on the ground that the deceased was not his patient. He was asked by the coroner whether he would like to attend the inquest or had any statement to make. He replied that he was not aware that he was bound to attend to any call that might be made on him, whether by the police or other persons. If the police required assistance they had their proper officer to whom to apply. In the present case he was expecting to be called out and therefore declined to leave home. Commenting on this, the coroner said that there is no law which compels a physician to answer a call to a man dying in the next street. But he said that he thinks there is a law higher and stronger than the law of man which calls us to try to help those in great distress without waiting to think what it will cost us, or what we shall have to pay, or whether it is convenient. Even those who have no medical knowledge would feel it a duty to go and help, as one witness did, if they knew a man was dying. He thought that the refusal of the physician to go in this case brought disgrace on a high and honorable profession. The jury endorsed the coroner's remarks by adding them as a rider to the verdict. Subsequently, the proceedings at the inquest were considered by the North-East Essex Division of the British Medical Association and a protest was made against the coroner's remarks. The meeting resolved that it is not the duty of individual members of the profession but of the municipality to make proper provision that so far as practicable no case of sudden and dangerous illness shall remain without prompt medical attention; that while physicians are ever ready to respond to the calls of humanity they are bound to consider the claims of their own patients and can not neglect these to attend to casual calls to strangers; that such summonses, even when stated to be urgent, are often found to be not so; that in the present case the messenger had not made clear to the physician the urgency of the case; that the members of the division, while repudiating the impracticable view of their duties in such cases suggested by the coroner, would be prepared to coöperate with the municipal authorities in devising a proper scheme for providing medical attendance in emergencies.

The Ventilation of the House of Commons.

The ventilation of the House of Commons has been a frequent subject of debate during the past 40 years and no satisfactory method has ever been devised. The ventilation of both

houses of Parliament was originally planned by Dr. Boswell Reid. From 1865 to 1889 it was superintended by Dr. John Percy, the metallurgist, who devised many ingenious contrivances for cleansing the entering air and for regulating its flow; but he never succeeded in establishing a system beyond the reach of criticism or one equally adapted to the variations of weather. Since his death, the problem has continued and the chemical examinations of the earlier period have been supplemented by bacteriologic ones. Last year a committee consisting of Sir Michael Foster, as chairman, with Dr. J. S. Haldane and Dr. Mervyn Gordon, was appointed to carry out further systematic observations. Their report has been recently published. Whether judged by the amount of carbonic acid present, the temperature or the humidity, the atmosphere of the House was found to fulfill all reasonable requirements. The cause of the appointment of the committee was an outbreak of influenza among the members. It was admitted that so far as objective tests went, the quality of the air of the house was good, but the subjective test of the members' sensations pointed in the opposite direction. It was a common experience that the air of the chamber wanted "freshness," and that a stay in it for a length of time caused "lassitude and a feeling of heaviness." It was also pointed out that as the air is admitted through the floor it is liable to dust and various pollutions carried on members' boots. The character of the air admitted from the terrace was also impugned. It was found that, although the Thames mud below the terrace swarms with intestinal bacteria, these but seldom reach the air inlet, either in the form of spray or dust. The admitted air is washed and filtered through cotton wool. Even before washing it presents no appreciable quantity of any noxious ingredient. The boots of the members were found to be responsible for a small quantity of dried and powdered manure in the dust of the house. There was no discoverable entrance of influenza by either road. Dr. Mervyn Gordon has devised an ingenious method of testing the contamination of the air of rooms by speakers. He discovered that a characteristic bacterium (*Streptococcus brevis*) is always present in human saliva. On placing plates of agar in various positions about a room cultures of this organism appeared. He demonstrated the fact that in speaking droplets of saliva are projected through the air to a distance varying with the vigor of the speaker, sometimes as far as 40 feet. He inoculated the mouth of a speaker with an emulsion of a harmless and easily recognized bacillus (*B. prodigiosus*) and distributed plates in various position in the House of Commons. On one plate, which was placed on the minister's box, he found no fewer than 83 colonies of this bacillus. There was abundant evidence that a member convalescent from influenza might be a source of danger to those in the direction of his speech. The committee recommend a more abundant introduction of air and its better diffusion. As regards the introduction of dirt into the house on the feet, ample precautions are already taken against ill results. The matting on the gangways is disinfected weekly and the floors are aspirated with a vacuum cleaner. The amount of dust so extracted from the debating chamber amounts to 45 pounds weekly.

VIENNA LETTER.

(From Our Regular Correspondent.)

VIENNA, Aug. 12, 1906.

New Regulations for the Out-Patient Departments in State Hospitals.

With the beginning of the new term or semester at the university hospital, new regulations for the admission of patients to the out-patient halls will come in force for all public, i. e., state hospitals in the capital. The abuse has attained such a degree that at last our ever too slow magistrates were forced by a very powerful agent to condescend to reconsider the matter. This most influential agent was the deficit in the yearly report of the financial committee, which reached the figure of 27 per cent. of the total turn-over for 1904-5. A joint action of both the hospital managers' board and the representative of the medical council was proposed and resulted in the adoption of the long-expected changes. In future, material help to these out-patient departments will be free only to such as will provide a testimonial of poverty, to be signed either by the landlord of the tenement or by specially appointed guardians of the poor. This testimonial will admit the bearer to the out-patient department or ambulatorium, as it is termed here, and he will receive in exchange for this document a card entitling him to be seen by the medical staff of the hospital. For certain cases exceptions to the rule are provided for. Thus every case of accident or emergency is free from all formality or "red tape." If the treatment has to be continued for a very long period, or by unusual apparatus and remedies not in possession, as a rule, of the general practitioner (radium, *x*-rays), the patient or his medical advisers may apply for permission to frequent the ambulatorium. A moderate charge is then not inappropriate. Patients of the hospital wards, if discharged, may continue the treatment if it proves necessary, at the ambulatorium without any special permit. This applies to the surgical and certain medical cases. A special feature, and one which will meet the approval of all general practitioners, is the clause debarring persons belonging to one of the obligatory sick benefit clubs from the privileges of the hospital. These persons, who by their positions as subordinates of commercial or business establishments are by law forced to enter one of the "contract clubs," and who have to be attended by specially appointed contract doctors, have their own specialists and still abuse the hospitals. They will have to be seen in future by their own medical advisers. Furthermore, the present habit of supplying the out-patient with bandages, medicines and the like free of charge will be stopped, only such material as is used in the dressing room for surgical patients will in future be granted. To insure a just mode of dealing with the patients they will be treated according to the time of their arrival.

Increase of Poisonous Serpents and Protective Measures.

Certain districts in the southern countries of Austria are suffering from the presence of dangerous serpents of the viper type. The abnormal condition of the temperature seems to have a very favorable effect on the development of whole families of these pests, and during recent maneuvers several accidents happened therefrom. The ministry of war, therefore, has ordered a number of men in each company to be supplied with small packets of permanganate of potassium, which has been found to be very useful in counteracting the poisonous effects of the bite, and small gratuitous quantities of the permanganate are distributed in the affected district by the local authorities, apart from the regular "serpent hunts" established by certain army officers.

New Radioactive Baths.

Ever since the examinations, conducted by competent scientists, of the nature of the therapeutic action exercised by the Gastein waters have shown that the main source of the beneficent quality is the presence of radium emanation, experiments have been going on in the place where the greatest quantities of pitchblend and radium salts are found, in Joachimsthal near Prague, to ascertain whether the waters found in these mines could not be used for medical purposes. At the clinic of Professor Neusser of Vienna, whose name is well known in Europe, a large number of patients have been subjected to a treatment with these waters. Patients with gout, rheumatism, neuritis and diabetes have been benefited by the internal and external use of Joachimsthal mine water. It has been found that there are two distinct groups of waters to be obtained therefrom. The weaker water, containing from 8,000 to 10,000 volts of emanation, was derived from the underground springs and brooks, which are constantly flowing in the deeper shafts and have to be pumpe away to keep the mine workable. The stronger water was obtained from the refuse of the mining process, which combines various chemical processes, and in its last step requires the washing of the material by sulphuric acid. The ultimate results are uranium (used for coloring purposes) and a water charged with radium emanation in a high degree, so that it excels the Gastein waters three or four times in its voltage. These latter waters have been used also for prostatic enlargement with remarkable success. The baths have shown themselves so active that general symptoms (due to destruction of leucocytes) may appear after incautious use. In Joachimsthal itself, a bathing house with at present only 12 cabins has been established for radium baths. In a similar way the hot sulphur baths of Baden, near Vienna, have been tested and the presence of radium emanation, though in a lower degree, was detected. The experiments tend to show that the presence of the active principle is in an inverse ratio to the temperature of the water. The sulphur mud deposited at the hot springs in this place contains radium bromid, so that it affects the photographic plate. This explains why, for instance, inveterate cases of skin disease respond so readily to the mud baths at Baden, although they are refractory to water baths and ointment even in Aehen or other hot sulphur baths. It is planned now to institute special radioactive sulphur baths in this place, and it will be the first health resort of its kind which can boast both of the vicinity of the capital and of the radioactivity.

Pharmacology

SOMNOS.

To the Council on Pharmacy and Chemistry of the American Medical Association:—Your subcommittee, to whom was assigned Somnos, H. K. Mulford Company, submits the following report of experiments, undertaken to compare the effects of Somnos with those of chloral hydrate. These experiments demonstrate that the statements made in regard to the action of Somnos are in conflict with Rule 6 of the Council, which requires: "No article will be admitted or retained concerning which the manufacturer or his agents make unwarranted, exaggerated or misleading statements as to the therapeutic value." It is, therefore, recommended that Somnos be not approved for inclusion in the book until the claims made for it are corrected. It is also recommended that the report be published:

The Pharmacology of Somnos.

When these experiments were begun, April, 1906, there was nothing in the advertising literature on Somnos to indicate whether this article is a solution or a pure substance. On the label on the bottle, in the circular accompanying the bottle, and in the booklet "Somnos," the word Somnos seemed to be used as a synonym of "Chorethanal alcoholate," $C_9H_{11}O_6Cl_9$ and physicians were prescribing and pharmacists dispensing it in the belief that it was a pure substance. "The pure substance; some kind of an alcohol; nothing to do with chloral," was the way the druggist from whom the samples were purchased put it. Thus information absolutely indispensable for any rational comparison of Somnos with other hypnotics was witheld from the physician.[1]

Hence, before beginning the physiologic experiments it was necessary to determine the strength of the preparation: for this purpose three chlorin determinations (by the Carius method) were made. On the assumption that all the chlorin present was in combination as chloral glycerate, $C_3H_5[CCl_3.C(OH)_2]_3 = C_9H_{11}O_6Cl_9$, and calculating the percentage of this in Somnos, the following results were obtained: (1) 5.11 per cent.; (2) 5.15 per cent.; (3) 5.10 per cent.

Somnos, therefore, was found to contain approximately 5 per cent. of chloral glycerate and its physiologic action was compared with that of a 5 per cent. solution of hydrated chloral. In some experiments the hydrated chloral was dissolved in water; in others, in 10 per cent. alcohol (Somnos was found to contain at this time about this percentage of alcohol); in other experiments glycerin was added, as Somnos was found to contain this substance. No very marked differences were found in the physiologic action of the three solutions.

FATAL DOSE OF SOMNOS FOR THE LOWER ANIMALS.

The booklet on Somnos states that "Somnos has no toxicology"; that while chloral hydrate causes "acute poisoning," "deep coma," etc., Somnos is "harmless in twenty times the dose prescribed," "coma unknown, etc." The physician would scarcely suspect from such statements that Somnos is as poisonous a substance as solutions containing hydrated chloral in corresponding amount; that such is the case is shown by the following experiments. These experiments were necessarily made on the lower animals. While such results do not enable us to draw very definite conclusions as to the absolute toxicity of poison for man, the results on animals are conclusive as regards the relative toxicity for man of such closely related drugs as hydrated chloral and Somnos.

EXPERIMENTS ON MICE.

Injected subcutaneously into mice, there is but little difference in the lethal doses of Somnos and a 5 per cent. solution of hydrated chloral (Tables 1 and 2).

1. Two weeks ago (JOURNAL A. M. A., Sept. 1, 1906, p. 695) it was pointed out that the manufacturers now give this information, but in a wholly unnecessarily obscure form.

Table 1.—Somnos injected subcutaneously.

Weight of mouse	Somnos c. c.	$C_9H_{11}O_6Cl_9$		Results
		Per mouse	P'r gm. mouse	
19.86 gm.	0.28	13.9 mg.	0.7 mg.	Survived.
18.12 gm.	0.25	12.68 mg.	0.7 mg.	Survived.
19.35 gm.	0.29	14.51 mg.	0.75 mg.	Died 1¾ h.
18.62 gm.	0.3	14.9 mg.	0.8 mg.	Died 15 m.
15.68 gm.	0.26	13.33 mg.	0.85 mg.	Died 4 h.
25.02 gm.	0.45	22.52 mg.	0.9 mg.	Died 10.5 h.

Table 2.—Hydrated chloral, injected subcutaneously.

Weight of Mouse	Hydrated chloral (in 5% aqueous)		Results
	Per mouse	Per gm. mouse	
18.62 gm.	11.17 mg.	0.6 mg.	Survived.
24.12 gm.	15.68 mg.	0.65 mg.	Survived.
24.62 gm.	17.23 mg.	0.7 mg.	Survived.
20.16 gm.	15.12 mg.	0.75 mg.	Survived.
22.16 gm.	17.73 mg.	0.8 mg.	Died 30 min.
17.72 gm.	14.53 mg.	0.82 mg.	Survived.
18.50 gm.	15.73 mg.	0.85 mg.	Died 5 h.

Table 3.—Hydrated chloral, *per os.*

Weight of guinea-pig	Mg. of Hydrated chloral (in 5% aqueous solution)		Results
	Per animal	P'r gm. anim'l	
455 gm.	227.5	0.5	Survived.
335 gm.	184.25	0.55	Survived.
660 gm.	369.5	0.56	Survived.
305 gm.	183.0	0.6	Died, 9 h.
340 gm.	240.0	0.6	Died, 6¼ h.
365 gm.	240.9	0.66	Died, 4¾ h.

Table 4.—Somnos, *per os.*

Weight of guinea-pig	Somnos c. c.	Mg. of $C_9H_{11}O_6Cl_9$		Results
		Per animal	Per gm. animal	
590 gm.	5.66	283.2	0.48	Survived.
420 gm.	4.2	210.0	0.5	Survived.
265 gm.	2.65	132.5	0.5	Died, 14 h.
370 gm.	4.07	203.5	0.55	Died, 7¾ h.
355 gm.	4.26	213.0	0.6	Died, 34 h.
340 gm.	4.41	220.5	0.65	Died, 3½ h.
435 gm.	5.8	291.45	0.67	Died, 3½ h.
415 gm.	5.9	294.65	0.71	Died, 2 h. 10 m.

Table 5.—Hydrated chloral in 10 per cent. alcohol *per os.*

Weight of guinea-pig	Hydrated chloral in 10% alcohol per animal c. c.	Mg. of Hydrated chloral		Results
		Per animal	Per gm. animal c. c.	
290 gm.	2.9	145.0	0.5	Survived.
435 gm.	4.35	217.5	0.5	Survived.
410 gm.	4.53	221.4	0.54	Died, 2½ h.
350 gm.	4.06	203.0	0.58	Died, 1¾ h.
340 gm.	4.28	214.2	0.63	Died, 2 h.
385 gm.	5.2	261.8	0.68	Died, 3 h.

EXPERIMENTS ON GUINEA-PIGS.

Administered *per os* to guinea-pigs, there is but little difference in the lethal dose of Somnos and a 5 per cent. solution of hydrated chloral in water or dilute alcohol (Tables 3, 4 and 5).

On page 5 of the booklet "Somnos," the astonishing statement is made, "All tests showed that Somnos, given in twice the fatal dose of chloral hydrate, merely produced natural sleep, from which the animals awakened in a normal condition." Since Somnos is about a 5 per cent. solution of chloral glycerate, it is evident that a 5 per cent. solution is here compared with a pure substance; this is equivalent to saying that it is possible to give more of a 5 per cent. solution of a poison than of the undiluted poison. When it is remembered that in the booklet in which this statement is made the strength of

Somnos is nowhere given, can there be clearer evidence of a deliberate attempt at misrepresentation?

2. The conclusions drawn by C. C. Stewart in a report in Bulletin No. 1 of the American Pharmacologic Society are of interest in this connection. This writer states, p. 19: "As nearly, therefore, as can be determined by experiments on the lower animals, twenty times the normal dose (that is, 10 ounces of the elixir, Somnos, for a 70 kilo. man) must be considered as an extremely dangerous quantity, while thirty times the prescribed dose (that is, 15 ounces for a 70 kilo. man), may be considered as lethal." It is a well established fact in pharmacology that the more highly developed the brain the more toxic, relatively, are substances which act primarily on this organ; hydrated chloral, for example, is, in proportion to body weight, more toxic for man than for the dog. Hence it is fair to assume that this figure 20, derived from experiments on the lower animals, is high rather than low. Yet the firm has been sending broadcast throughout the country the statement that Somnos is "harmless in twenty times the dose prescribed." To what extent this statement has been accepted it is impossible to state. In the booklet, "Somnos," p. 17, is an interesting testimonial from Kent Kibbie, professor of anatomy, Medical Department, Dallas University, Fort Worth, Texas: A woman violently insane for three weeks, to whom had been given "liberally" "morphin, chloral, sulphonal, and the bromids," was given ten tablespoonfuls of Somnos in the course of five hours; after five hours, she "simmered down" and slept for twelve hours. The question may be asked what would have been the result had she received twenty to forty tablespoonfuls, the amount which is stated by the manufacturer to be harmless?

It may be noted, in this connection, that in the above report Stewart records no experiments on the comparative toxicity of Somnos and hydrated chloral; if the American Pharmacologic Society is really endeavoring to get impartial information about Somnos before the medical profession, it would seem that this should have been one of the first subjects investigated.

EFFECTS OF SOMNOS ON RESPIRATION, CIRCULATION AND TEMPERATURE.

The booklet on "Somnos," in comparing the effects of Somnos with chloral hydrate states, page 13, for Somnos, "heart never depressed; pulse strong, regular and full, respiratory center stimulated rather than enfeebled, temperature uninfluenced," etc., while the dire effects of hydrated chloral are stated thus: "Weak, irregular, slow, feeble pulse; diminished respiration and lividity; temperature subnormal," etc. In the following experiments, the effects of Somnos on respiration, blood pressure and temperature were compared with those of corresponding amounts of hydrated chloral; the doses employed were just sufficient to cause a few hours quiet sleep. Sometimes the sleep caused by Somnos was slightly deeper and more prolonged; in other cases, the effect of the hydrated chloral was slightly greater, but we do not believe that the most experienced observer could have told from the effects with which drug he was working.

Experiments on Dogs.—Experiments were made on two dogs very similar in breed and disposition:

EXPERIMENT 1.—April 30, 1906. Black bitch; weight, 4.75 kilos.

10:26 a. m.—Rectal temperature, 39.6 C. Very lively; barking.
10:28—1.899 gm. hydrated chloral dissolved in 38 c.c. of 10 per cent. ethyl alcohol *per os* (=0.4 gm. hydrated chloral per kilo. body-weight).
10:32—A little quieter, but moving about; staggering. Stands on hind legs; does not bark.
10:37—Rolling about; raises body up on fore feet.
10:36—Unable to stand; tries it and falls.
10:35—Tumbles about a little.
10:38—Respirations 44 a minute.
10:39—Barely able to raise head; does not react strongly to pinching ear.
10:40—No conjunctival reflex.
10:43—Impossible to arouse.
10:45—Respirations 68 a minute.
11:15—Rectal temperature 38 C. Respirations 36 a minute. No reflexes.
12:00—Moved about on insertion of thermometer; had to be held. Rectal temperature, 35.9 C. Easily aroused, almost gets up.
12:45—Moves about; can raise up on forelegs; then falls. Very "groggy." Impossible to insert thermometer without holding.
1:00—Rectal temperature, 35.8 C.
1:20—Slight convulsive movements.
2:00—Dog standing, but staggering. Rectal temperature, 36.7 C. Up and howling.
3:00—Practically recovered; very noisy. Rectal temperature, 38.4 C.
4:00—Rectal temperature, 38.8 C. Entirely recovered.

EXPERIMENT 2.—May 1, 1906. Black bitch; weight, 3.943 kilos.

11:06—Rectal temperature, 39.6 C.
11:10—31.5 c.c. Somnos given *per os* (=1.577 gm. of chlorethanal alcoholate = 0.04 gm. per kilo.).
11:15—Movements slightly incoördinated.
11:19—Tumbling about; hind legs paralyzed, but holds head up.
11:21—Barely holds head up.
11:26—Lying down, unable to hold head up; 40 respirations a minute.
11:35—Moves head slightly on inserting thermometer.
11:40—Rectal temperature, 37.8 C. Reacts very slightly to pinching.
11:45—Respirations, 42 a minute.
11:50—Conjunctival reflex absent. Impossible to arouse; pinching, etc., causes slightly accelerated respiration.
12:05—Barely perceptible reaction on insertion of thermometer.
12:10—Rectal temperature, 36.2 C.
12:45—No reaction on insertion of thermometer.
12:50—Rectal temperature, 34.8 C.
1:05—Respirations, 18 a minute.
1:15—Shows tendency to wake; throws herself about slightly.
1:20—Rectal temperature, 34.3 C.
1:25—Almost gets up. Respirations, 16 a minute.
1:50—Rectal temperature, 34.2 C.
2:00—Respirations, 16 a minute. Deeply under; can be aroused slightly.
2:10—Quivering.
2:30—Reacts considerably to insertion of thermometer.
2:35—Rectal temperature, 34.4 C.
2:39—Holding head up; tumbles about a little.
2:55—Sitting up, but very unsteady.
3:00—Stood up, but very unsteady.
3:05—Rectal temperature 36.2 C.
3:20—Up and walking about; almost recovered.
3:35—Rectal temperature 37.2 C.
4:20—Rectal temperature 38 C.

The condition of the animals in these two experiments was very nearly the same; the narcosis was equally prolonged (about three hous). The narcosis from Somnos was a little deeper; the temperature and respiration were also more depressed. The effects on the temperature are shown in Figures 1 and 2.

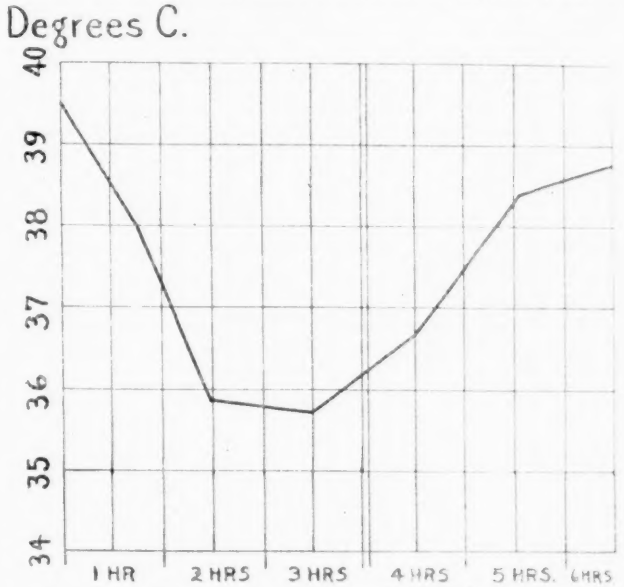

Fig. 1.—Experiment on a dog (1) showing depression of the temperature caused by 38 c.c. of a 5 per cent. solution of hydrated chloral (=0.4 gm. hydrated chloral per kilo. dog). This solution, which about corresponds in strength to Somnos, caused less depression of the temperature than did the latter (cf. Fig. 2). The sleep continued about three hours.

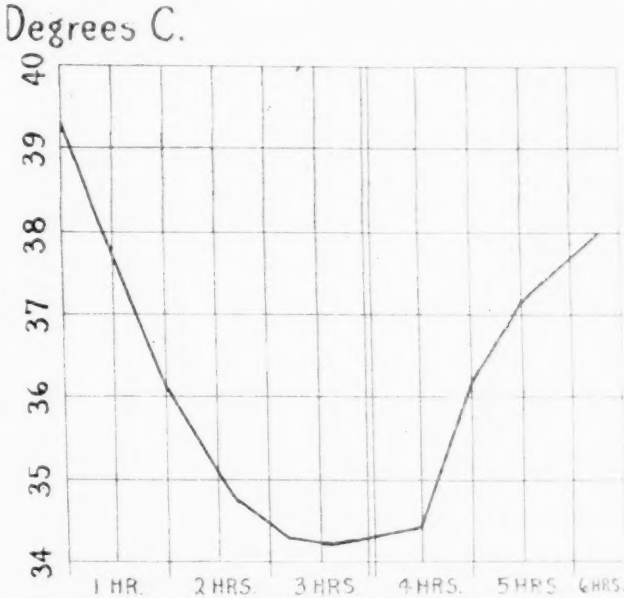

Fig. 2.—Experiment on a dog showing the depression of the temperature from 31.5 c.c. Somnos (=0.4 gm. chloral glycerate per kilo. dog). The Somnos caused a greater depression of the temperature than did a solution of hydrated chloral of corresponding strength (cf. Fig. 1). Sleep continued about three hours.

In the following experiment a smaller dose of Somnos was given; the results show the inefficiency of small doses:

EXPERIMENT 3.—May 2, 1906. Yellow bitch, 5.98 kilos.

11:00 a. m.—23.9 c.c. Somnos (containing 1.196 gm. chlorethanal alcoholate or 0.2 gm. per kilo.) given *per os*.

11:25—Lying down, asleep most of the time; very easily aroused; gets up and seems normal, except for some incoördination. After a little the incoördination passed off, but she continued sleepy for about three hours; was easily aroused by snapping fingers.

Blood Pressure Experiments.—The following blood pressure experiments were made:

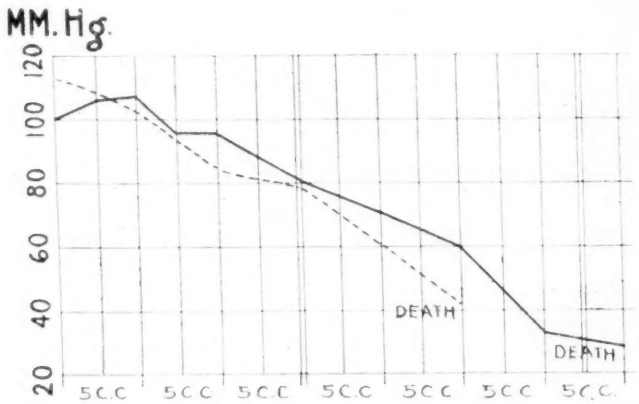

Fig. 3.—Showing the depression of the blood pressure from equal amounts of Somnos (dotted line) and a 5 per cent. solution of hydrated chloral (continuous line). The effect on the blood pressure was about the same, but death resulted from a smaller amount of Somnos than from a 5 per cent. solution of hydrated chloral. The figures on the left represent blood pressure in millimeters of mercury.

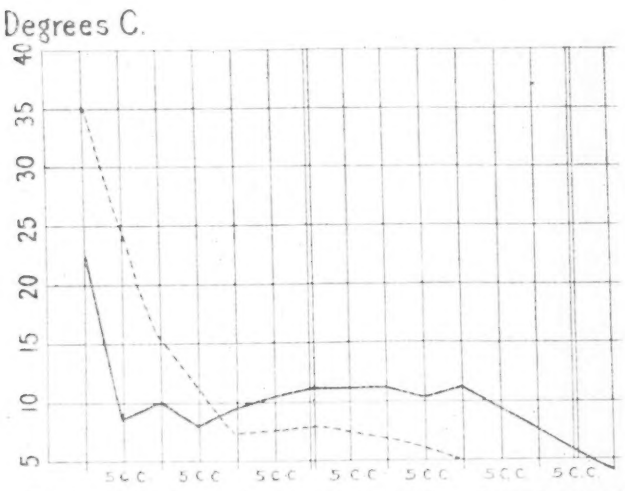

Fig. 4.—Showing the effect on the respiration of equal amounts of Somnos (dotted line) and a 5 per cent. solution of hydrated chloral (continuous line). The depression is about as great from the one as from the other.

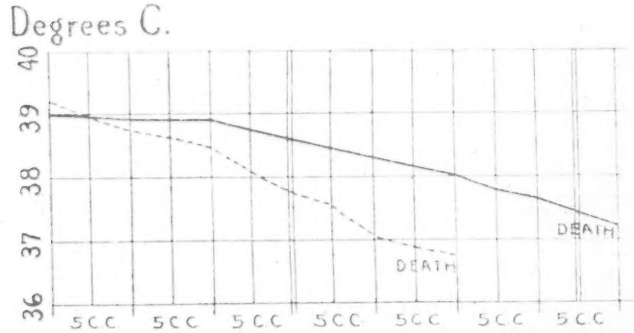

Fig. 5.—Showing the depression of the temperature from Somnos (dotted line) and hydrated chloral (continuous line). Somnos caused a greater fall of temperature than did an equal amount of hydrated chloral.

EXPERIMENT 1.—April 25, 1906. Rabbit, 2190 gm. Somnos injections into saphenous vein.

Time	Somnos injected c.c.	Duration of injection, minutes	Respiration in 10 sec.	Blood pressure (carotid) in m. mercury	Rectal temperature
12:36	....	....	....	....	39.2
12:45	....	....	35½	114	....
12:45½	5	2	....	....	....
12:52	....	....	....	....	38.8
12:59	....	....	15½	105	....
1:21	5	1 ½	....	....	....
1:23	....	....	....	....	38.6
1:32	....	....	....	....	38.5
1:49	....	....	7½	86	....
1:50	5	1 1-6	....	....	....
2:17	....	....	....	....	37.8
2:20	....	....	8	79	....
2:20 1-6	5	1 ½	....	....	....
2:25	....	....	....	....	37.6
2:45	....	....	....	....	37.1
2:49	....	....	7	61	....
2:49 1-6	5	1 ½	....	....	....
3:12	....	....	....	....	36.8
3:20	....	....	5½	42	....
3:20 1-6	5	1 1-3	....	....	....

3:22½, respiration ceased; 3:24, heart ceased.

EXPERIMENT 2.—April 26, 1906. Rabbit, 2300 gm. Five per cent solution of hydrated chloral injected into saphenous vein.

Time	Hydrate chloral c.c.	Duration of injection, minutes	Respirations in 10 sec.	Blood pressure (carotid) in m. mercury	Rectal temperature
12:08	....	....	....	....	39
12:12	....	....	23	100	....
12:12 1-3	5	1	....	....	....
12:19	....	....	....	....	38.9
12:24	....	....	9	106	....
12:50½	....	....	10	107	....
12:51	5	1 1-6	....	....	....
12:57	....	....	8 ½	96	38.9
1:21½	....	....	9 ½	96	....
1:22	5	1 1-3	....	....	....
1:49	....	....	11	81	....
1:49 1-3	5	1 ½	....	....	....
2:17	....	....	....	....	38.3
2:19	....	....	11	72	....
2:19 1-6	5	2	....	....	....
2:26	....	....	10½	....	....
2:49	....	....	11	59	38
2:49 1-3	5	1 ½	....	....	....
3:06	....	....	....	....	37.8
3:21	....	....	10	34	37.7
3:21 1-3	5	1 1-3	....	....	....
3:26	....	....	6	29	....
3:28	....	....	4½	....	....
3:40*	....	....	....	....	37.2

*3:40, respiration ceased; 3:42, heart ceased.

Results of these experiments are shown in Figures 3, 4 and 5.

Many other similar experiments were performed. The results were very uniform and admit of the following conclusions: Somnos is slightly more toxic than a 5 per cent. solution of hydrated chloral in water; the narcosis produced by it is slightly deeper but the respiration and temperature are also correspondingly more depressed; the blood pressure was equally depressed. The physiologic action of Somnos is practically indistinguishable from that of a 5 per cent. solution of hydrated chloral in 10 per cent. alcohol; sometimes the one, sometimes the other produced a slightly greater effect (depending probably on individual variations in the animals) but with the deeper narcosis there was invariably associated a greater depression of the respiratory center and of the temperature.

The urine of rabbits which had been given Somnos contained a levo-rotatory compound which reduced Fehling's solution readily; it was probably urochloralic acid, the same substance found in the urine after the administration of hydrated chloral.

Experiments on the effect of Somnos on the number of red blood corpuscles (on which the manufacturers lay considerable stress) have not yet been made; but surely no one experienced in blood work would attach much importance to experiments such as those described in the booklet on "Somnos," pages 6 to 10.[3] The method of administering the drug, the time at which

3. These statements are repeated, practically unchanged, in the report by W. H. Lippert, M.D., in Bulletin No. 1 of the American Pharmacologic Society.

the blood was taken for examination, the intervals between the different experiments are passed over without a word. It is very improbable that amounts of hydrated chloral varying from 1½ to 2 grains, amounts having no noticeable effect on a dog, would cause a reduction of 16.02 per cent. in the number of red blood corpuscles.

In the absence of any proof, the statement on page 4 of the booklet "Somnos," that Somnos produces sleep by causing a contraction of the neurons and that it is the only hypnotic known possessing this property, is an insult to the intelligence of the physician.

CONCLUSIONS.

To sum up our results on the physiologic action of Somnos: We have been completely unable to verify the claims of the manufacturers that Somnos is less toxic than hydrated chloral, or that it has a less depressing effect on temperature, respiration or circulation. On the contrary, the physiologic effects are indistinguishable from those of hydrated chloral, doubtless because the action of Somnos is simply the action of hydrated chloral. We can see nothing in the animal experiments or in the chemical composition which would suggest that Somnos would possess therapeutic advantages over an elixir of hydrated chloral of corresponding strength.[4]

It is to be hoped that physicians who have been blindly using Somnos without even knowing the strength of the preparation, much less what it is, will compare its effects with those of a 5 per cent. elixir of hydrated chloral.[4]

The Vice of Generalizing.

According to Rupert Hughes, writing in the current *Harper's Weekly*, says a lay exchange, the habit of generalizing from single sentences is far too general and influential. One would think, from some of the generalizations, he says, that the monopolists of money, for example, had also monopolized wickedness. "Yet the news of the day will tell of preachers caught in plagiarism or adultery, of druggists selling poisoned soda water, of bakers vending unclean bread, of theological students cheating." Each trade, he says, has its graft. The fact is that "drawing indictments against classes is as insane and illogical as drawing indictments against nations." There are "burglars who are chaste, and parsons who are sots; there are rich women who are nuns of asceticism, and poor women who are so vilely extravagant as to bankrupt their ditch-digging keepers; there are poets who are domestic models, and plumbers who are voluptuaries; there are rich men who overwork, and poor men lazy enough to beg; there are millionaires' sons who are normal and athletic, and self-made men who are degenerates; there are robust athletes who are abnormal, and cigarette fiends who are leaders of progress; there are Sicilians who never saw a dagger and Puritans who seek vendetta with a knife or with poison; there are policemen who would reject a bribe, and senators who are devoted to their country; there are chorus girls of unimpeached repute, and Sunday-school teachers who commit infanticide."

The above is interesting to physicians, in so far as the comparison would apply with equal force to medicinal agents, whether official or proprietary. In the crusade against nostrums, some are inclined to go to the extreme. All nostrums are proprietary medicines, but by no means are all proprietaries nostrums. Just as the laborer is worthy of his hire, a fair reward should be allotted to the discoverer of a medicinal agent; but this reward should not be made perpetual. A coined word, trademarked, grants a perpetual monopoly, and hence should not be encouraged. But a patented article, or a patented process of manufacture gives protection for a limited time only, and is not necessarily to be condemned.

In a recent letter in THE JOURNAL, the following appeared in parenthesis: "I regret to say that this is also a proprietary remedy, but it seems to work well; possibly other silver compounds would do as well." Our correspondent evidently did not know that the preparations he had previously referred to in his communication are also proprietary. Universal condemnation of proprietary preparations will not help the work of ridding the medical profession of nostrums. We, therefore, appeal to our readers to use judgment, tempered with patience, in dealing with this troublesome question.

4. The booklet on Somnos, "Somnos, a Pharmacological Report," which is referred to here, contains a "Therapeutic Index to the Usefulness of Somnos." We give below a list of diseases mentioned in this index to show the wide range of usefulness (?) that is claimed for this chloral compound. Abortions. Abscess—of brain, kidney, liver, tonsils, paroid gland, mediastinum; in appendicitis, glanders, perinephritic, retropharyngeal, pyemic, pelvic, ovarian. Somnos lessens pain and quiets nervous state. Tablespoonful, repeated once or twice. Use liberally. Alcoholism—full doses, repeated often. Gives calm sleep. No blood changes like those produced by chloral. Anemias—progressive and secondary. Somnos has no deleterious action on blood as is common with other hypnotics. Aneurism. Angina. Apoplexy. Appendicitis. Arthritis. Arsenical poisoning. Arteriosclerosis. Asthma. Biliary colic. Bright's disease. Carbuncle. Carcinoma. Catarrh. Cellulitis. Cerebrospinal fever. Chlorosis. Cholecystitis. Chordee. Chorea. Cirrhosis. Coccydynia. Colic. Colitis. Concussion. Confusional insanity. Contusions. Convulsions. Coryza. Cough. Cramps. Cystitis. Delirium. Diabetes. Diarrhea. Diphtheria. Dropsy. Dysmenorrhea. Dyspnea. Ear. Emphysema. Empyema. Endocarditis. Endometritis. Epididymitis. Epilepsy. Erysipelas. Fevers. Fistula. Gallstones. Gastralgia or Gastrodynia. Gastritis. Gonorrhea. Goiter. Gout. Hallucinations. Hay fever. Headache. Heart Disease. Hemicrania. Hiccough. Hydronephrosis. Hydrophobia. Hydrothorax. Hyperesthesia. Hysteria. Indigestion. Inflammation. Insomnia. Kidney disease. Laryngitis. Liver abscess. Cirrhosis. Lobar pneumonia. Lockjaw. Locomotor ataxia. Lumbago. Mal de mere. Malarial fever. Meningitis. Migraine. Melancholia. Metritis. Morphinism. Muscular rheumatism. Myelitis. Myocarditis. Myositis. Nephritis. Nervous dyspepsia. Neuralgia, occipito-cervical, etc. Neurasthenia. Neuritis. Night sweats. Orchitis. Otitis media. Paresthesia. Paralysis. Parotitis. Peliosis rheumatica. Pericarditis. Perimetritis. Perihepatitis. Perichondritis. Peritonitis. Pertussis. Petit mal. Pharyngitis. Phthisis. Pleurisy. Pneumonia. Postepilepsy. Prolapsed uterus. Pseudo angina pectoris. Purpura. Rabies. Rheumatic fever. Salpingitis. Sarcoma. Scarlet fever. Smallpox. Spasms. Stomach. Stomatitis. Sunstroke. Tenesmus. Tetanus. Tonsilitis. Trauma. Trismus. Typhoid fever. Typhus fever. Ulcers. Urticaria. Varicella. Vomiting. Vulvitis. Yellow fever.

Correspondence

The Walker Resolutions.

KANSAS CITY, Sept. 6, 1906.

To the Editor:—After reading Dr. Carstens' letter in THE JOURNAL, September 1, I desire, as the mover of the motion to lay the Walker resolutions on the table, to correct some erroneous impressions that have gained circulation regarding the reasons for tabling these resolutions.

In the first place, I had no knowledge that such resolutions were to be introduced, nor had I been asked by any one to take any position relative thereto. When they were read, however, they at once impressed me as a covert attack on the honesty of the members of the Board of Trustees, and of the officers of the Association. I consider it necessary in any organization that a few men of capacity should have the main work fall on their shoulders. Such an organization would always be called by others a "machine." I do not object to this name, as a machine is understood to be an instrument for the accomplishment of work through improved methods. Admitting that there is a machine in the American Medical Association, in this sense, I would certainly find in that fact nothing objectionable. I fully believe that every member of the Board of Trustees and all the officers of the American Medical Association are perfectly honest, untainted by the slightest suggestion of personal graft, and it is, therefore, a machine in which I have full confidence.

In the second place, I was impressed with the idea that this resolution was introduced for ulterior purposes by influences which were antagonistic to the present policy and conduct of our Association and its journal. In this particular, I must fully support the course pursued by the Board of Trustees and the management of THE JOURNAL, and I believe that

their course is approved by 90 per cent. of the profession. I was unwilling, therefore, to countenance any scheme, under any mask, whose chief purpose was to thwart the wishes of the American medical profession and to stop the good work which had been well begun.

Finally, it struck me as the height of impudence that the mover of the resolution should lack sufficient confidence in the House of Delegates to permit it to name its own committee, should such a committee be desired. I certainly think, with no reflection on the names therein suggested, that a committee selected from the House of Delegates itself, where each member was more or less familiar with the matter in hand, would have been a more competent committee in every way. On the whole, therefore, the entire resolutions seemed to me to be uncalled for, improper and insulting, and for these reasons I made the motion to lay them on the table. I would judge that this same impression was produced on most of the members of the House of Delegates, since my motion was immediately seconded by several and unanimously carried.

It was evident that the principal desire in the minds of the members of the House of Delegates was to dispose of the resolutions in the quickest and most effective manner possible. The idea that the Trustees or the officers of the Association opposed or in any way hindered the adoption of the resolutions is absolutely contrary to the facts of the case, and palpably absurd.

JABEZ N. JACKSON, M.D.

State Board Results in the Educational Number.

SPRINGFIELD, Sept. 1, 1906.

To the Editor:—The data collected and tabulated in the Educational Number of THE JOURNAL (Aug. 25, 1906), gives to the medical profession a compact arrangement of facts not obtainable elsewhere, but it is to be regretted that existing conditions are not such as to render the results of your immense labor more generally satisfactory. Much may be learned by any person by a careful analysis of your figures, but at the same time many of your deductions and conclusions would convey most erroneous impressions to the casual reader. Inasmuch as the great majority of your readers will glance at your results rather than consider the conditions surrounding the origin of your data, I feel that it would be wise more emphatically to impress the fact on them that deductions based on figures which are not uniform in significance are very apt to be misleading.

The peculiar results to which we may be led by figures and statistics may be illustrated by the following brief instances: In your Table E, page 590 (Colleges Grouped by States Showing Numbers Examined and Percentages of Failures), we find that graduates of Arkansas colleges of the years 1900-1905, were successful in 100 per cent. of cases in state board examinations, while the Arkansas graduates of 1899 and previous years failed in 50 per cent. of cases. We might infer from these percentages that in mental and educational attainments, recent Arkansas graduates stood at the highest possible place in the list of all states, and infer further that the marked difference in standing between old and recent Arkansas graduates indicated an astonishing improvement in Arkansas' educational institutions. These deductions are, of course, set at naught when we find that the total number of 1900-1905 Arkansas graduates examined was one and of those of 1899 and previous years but two. Had the 1900-1905 graduate failed on examination, Arkansas would have fallen to the lowest place on the list, 46 per cent. lower than any other state. Had the one who failed of the graduates of 1899 and previous years, been successful, Arkansas would have gained the topmost place for all years, with only Connecticut and Maine in the sisterhood of supremacy. Of course, these percentages have not the slightest weight in showing the relative standing of Arkansas colleges as compared with those of other states. The same is true of Connecticut, which is given an equally exalted place. Of graduates of 1899 and previous years, Connecticut had one. He passed on examination. The effect of his failure on the percentage of Connecticut colleges in your table is obvious.

Table G (Comparison of Results Obtained by the Graduates of Colleges in Their Own States and Elsewhere), shows Dearborn Medical College with 100 per cent. of successes in Illinois and with 100 per cent. of failures in "other states." The 100 per cent. of failures in other states represents the failure of one graduate in one other state. Without consideration of this latter fact, it might not unreasonably be surmised that Illinois had licensed all graduates of a college not one of whose alumni had proven acceptable to any other state.

In the system you have adopted to facilitate comparison of the different state boards in passing or rejecting applicants figures are used which, it would seem, are hardly susceptible of comparison. You state editorially that in Kentucky and Colorado a number of applicants have been admitted without examination and that "these are included in figuring the percentage of rejections." Those so admitted in Colorado and Kentucky, seem, however, to have been included as successful. It would appear to me that to include these applicants either as rejections or as being successful renders more confusing a table which the casual reader, at least, had assumed to be for the purpose of showing results of examining boards.

Without burdening your columns with additional details, I should suggest the following points which must be given due consideration in comparing the results of the various state boards or colleges: 1. It is impracticable to compare the showing of a college whose graduates were examined exclusively by one board with the showing of another college whose graduates were examined exclusively by another board. It is impossible to tell whether the school or the board is responsible for the results. 2. The great majority of graduates in practically all schools are examined, first at least, in the states in which the individual colleges are located. Hence, the character of the schools in each state is an important factor in considering the severity or laxity of the examining boards of the state. 3. We may as well eliminate from our data the showings of colleges whose graduates have appeared before only a small number of boards, as these showings indicate little as to the ability of the graduates of such schools to pass the average state board examination.

The importance of these points may be briefly illustrated in the following: Of the 104 colleges listed by you, there were but 10 whose graduates had appeared before as many as twenty state boards. Of this group of 10, but two are found in your Table I—those whose candidates were rejected in less than 10 per cent. of cases before all boards. The 8 colleges are located, 1 in Maryland; 1 in Michigan; 1 in New York, 2 in Pennsylvania and 3 in Illinois. In Maryland, Michigan, New York and Illinois, from 75 to 80 per cent. of all applicants examined were graduates of schools in those states. Michigan rejected but 1.6 per cent. of her own graduates, New York 1.9 per cent. of New York graduates and Illinois 2.8 per cent. of Illinois graduates. These low percentages of rejections of the graduates of the states' own schools were due to the fact that these states have the largest number of graduates of colleges who have received high recognition in the largest number of other states. Maryland, on the other hand, rejected a much larger percentage of her own graduates, but in Maryland it is noted that the three largest schools come in your Table K—having over 20 per cent. of failures. Without the foregoing facts, it might be assumed that these states dealt with undue leniency with their own graduates.

As to the standing given by your tables to Illinois, on which the foregoing figures have considerable bearing, I desire to say a word.

Illinois does not pretend to be a state in which exactions in medical examination are unusually severe. The statutes require that the examination "shall be of a character sufficiently strict to test the qualifications of the candidate as a practitioner," and the State Board of Health endeavors to carry out the provisions of the law. If the candidate shows sufficient evidence of his ability as a practitioner, it becomes the duty of the board to grant him a certificate.

The showing that Illinois rejects a smaller percentage of Illinois graduates than of those of other states is largely due to the fact that the board is called on to examine so

large a percentage of graduates of Illinois colleges whose alumni receive uniformly high grades in all states and also to the fact that but 7 per cent. of the applicants appearing before the board and coming from outside the state represent those colleges showing less than 10 per cent. of failures. A word on this subject is warranted in view of the fact that, to the casual observer, the difference between the number of rejections among graduates of Illinois colleges and from outside colleges might appear as circumstantial evidence, at least, of discrimination against those from other states.

I am not sufficiently conversant with the examination methods of other states in which this evidence of possible discrimination appears in your tables, to speak authoritatively concerning them, but I can say, without possibility of successful rebuttal, that the Illinois method of examination practically precludes the possibility or discrimination either for or against any individual, any school, or any class of applicants.

The examinations of the Illinois State Board of Health are conducted by the secretary. None of the other members of the board attends or takes part in the examination. The secretary, however, has nothing to do with the preparation of the questions or the grading of the answers. The questions are prepared and the answers are graded by the other members. The identity of the applicant is unknown to the members who grade the answers. Each applicant is identified by a number. The number given the applicant at the examination is changed in the office of the board before the papers are submitted to the members, so that the papers of each applicant are graded under an entirely different number from that given the applicant at the time of examination—a number which can not be known to the applicant. The members examining the papers do not know and can not know, until after the papers are graded, whether the applicant comes from Maine or Illinois or California, and it might be said in this connection that no member, during the ten years in which I have been secretary, has ever manifested the slightest curiosity on the subject.

The Illinois State Board of Health acts as an examining board rather than as an examining and rejecting board, and the examinations are so conducted as practically to guarantee that all those who pass have done so fairly and honestly.

JAMES A. EGAN.
Secretary Illinois State Board of Health.

[Our correspondent's comments on Arkansas' percentage are correct, as far as Arkansas is concerned, but they do not apply to Connecticut, since the latter had a total of 30 applicants examined when the former had only 3. In our editorial accompanying the tables referred to, the following statement is made: "In making comparisons, besides the percentage, one must consider also the number examined and the number of state boards before which the college was represented." This applies to practically all the tables and particularly to Tables I, J and K, and if this is kept in mind there need be no misinterpretations. Table H was arranged particularly to show comparatively rejections by examining boards, and the terms "registered" and "rejected," instead of "passed" and "failed," as well as the comments on the table should prevent any one from thinking that it was based on examination only. States which register applicants on credentials without examination would certainly appear in a wrong light if those registered in such manner were not included in figuring the percentage of rejections. The methods adopted by the Illinois board in marking papers are interesting and may be of service to other examining boards.—ED.]

A National Examining Board.

CHICAGO, Sept. 1, 1906.

To the Editor:—To the extensive and rapidly growing literature of reciprocity in medical licensure may I add another contribution for the purpose of reviewing and elaborating a suggestion already made by others of a voluntary national examination and certificate?

In the address published in THE JOURNAL, August 25, Dr. Harvey has forcibly set forth the difficulties which stand in the way of interstate reciprocity. The examinations given by over sixty state and territorial boards are, and of necessity must long continue to be, so diverse in character and severity as to afford no satisfactory basis for any general reciprocity. Nor is any scheme of compulsory national licensure possible under our form of government. At the same time it is clearly the opinion of the large majority of contributors to this discussion that an examination and certificate by some central board under the control of the national government offers the most direct and satisfactory solution of the whole question.

The way is already paved for such a plan, by the fact that in many of the states medical officers of the Army, Navy and Marine-Hospital Service are already exempted from the operation of the medical practice acts. It only remains for such an examination to be open to any and every medical graduate who might wish to take it, paying therefor a suitable fee, and for the several state boards to accept the certificate obtained by the successful candidates in such examination.

In order that the tests proposed might furnish the best possible guarantee of the competence of those examined, certain conditions would have to be fulfilled. The examiners should be experts, each in his own medical branch. The board would not, therefore, be composed of Army and Navy surgeons, although the examinations should be conducted under the auspices and control of the medical departments of the U. S. Army and Navy, who would attend to the details of arranging time and place, keeping of records, issuing certificates and the like. The actual examiners should be recruited from the ranks of those who are engaged in teaching and research in the several medical sciences who would be detached from their teaching position by leaves of absence for the limited periods necessary for this duty. In order that the burden of this work might not fall unduly on any one person, no examiner should be expected to serve more than six or twelve months consecutively. By this plan the board of examiners would be composed of a professional anatomist from one college, a physiologist from another, a chemist from another, a surgeon from a fourth, etc., each of whom is an expert in his chosen line, familiar by long experience with the purpose and methods of examining.

We must come to recognize in this country, as they do abroad, that the business of examining is one demanding special training and experience, particularly in teaching, and that examinations can not be satisfactorily made by the average general practitioners who constitute the personnel of the several state boards. Moreover, it is a "narrowing" occupation of such restricted scope that exclusive devotion to it tends to unfit the individual for its duties. A changing board, such as is here proposed, renewed by the enlistment of fresh material every few months would be much more satisfactory and effective than a permanent board.

The examinations should be exhaustive, thorough and *practical*, extending as a rule over four to six days for each applicant, and comprising, as the most important features, actual tests of his ability in the various laboratories, in the actual examination of actual patients, the performance of dissections and operations on the cadaver and the like, as is the case abroad.

The same prerequisites should be exacted of candidates as are now demanded by the better state boards, such as evidence of graduation from a recognized medical college and certificates of good moral character.

The examinations might be held at suitable intervals in five or six of the largest cities of the country, where ample facilities could be secured for conducting them. The fee exacted of the applicants should be commensurate with the comprehensive and somewhat expensive character of the examination, and with the value of the certificate to be obtained. Every candidate could well afford to pay a fee at least as large as that now exacted by any of the state boards, for a certificate which would entitle him to practice anywhere in the United States at any time. It is believed that the income from such fees would be ample to meet the expenses of the board, including the payment of adequate compensation to the examiners.

It is difficult to see how any state board could refuse to recognize a certificate obtained by such an examination conducted by such a body of men; and accept it, too, not on the basis of an I-will-if-you-will reciprocity (an attitude which can never result in reciprocal licensure without a lowering of standards), but solely on the basis of merit.

It may be objected that the proposed plan offers no relief to the old practitioner who is sometimes compelled to migrate, not from mere "wanderlust," but by force of circumstances. Something must be done for these. The flippant manner in which their claims to just treatment are discussed in some of the recent contributions on the subject and dismissed by the state boards, argues an absence of appreciation of individual rights which ill befits a judicial body—for such as an examining board in the best sense should be.

May I add another case to the several which have been reported, showing how absurd, intolerable and indefensible is the present attitude of many of the state boards? A teacher in a prominent medical college had recently been invited to take the professorship of a special branch of medicine in the medical department of the state university of a western state. On applying for a license by reciprocity with the state in which he has successfully practiced for sixteen years, he is informed that owing to a ruling adopted by the board within a month, he must take the full examination. Naturally, being nearly twenty years away from his study of the fundamental branches, he hesitates to abandon his present position and practice to remove to a distant city, in the face of the very considerable risk of failing in the kind of examination—a purely written test of his book-cramming, memorizing ability—in which case he would be ineligible to practice in that state. And so this state university must fail to secure the accession to its medical faculty of a distinguished specialist, because of a three-weeks' old arbitrary enactment of the state board of medical examiners. This practitioner, like many others, would not hesitate to undergo a practical test of his real ability to practice medicine, and such an examination as has been here suggested he might successfully pass.

This plan is not offered, however, as a means of securing reciprocity for the older practitioner, but for the recent graduate, and to serve as a means of guarding the portals of the profession for the future. For all physicians who graduated previous to 1900, let us say, reciprocity should be universal. A physician who has been licensed by any state on any basis, and who is not disqualified from practice by any breach of moral or professional conduct, should be entitled to a license by reciprocity in every other state. The public is responsible by its neglect for the present conditions—the excessive number of cheap medical colleges and the consequent abundance of incompetent practitioners. No state has very much to boast of in this regard in comparison with the other states. Much as the community may desire to purge itself, or to exclude from its borders these incompetent physicians, for the existence of which the people themselves are responsible, it has no right to seek correction of present conditions at the expense of hardship and injustice to the innocent individual physician. The courts have ruled that retroactive medical practice statutes are unconstitutional within a state. Logically they are equally unjust as between states. Time alone, and death, will remove from the community the large number of poorly trained, ignorant physicians now in the profession. It should be the business of the state boards to guard the future. The plan of a voluntary examination and certificate by a national examining board, I believe, offers the best solution of the question.

JOHN M. DODSON.

Interstate Reciprocity and Frauds in Medical Schools.

DETROIT, Sept. 5, 1906.

To the Editor:—Under the above heading Dr. Dudley Tait, of San Francisco, a member of the California Board of Medical Examiners, calls attention to the necessity of coöperation of examining boards in the investigation of medical colleges, as follows:

> In the discussion of the perplexing problem of interstate reciprocity one important phase of the question has apparently been totally overlooked: the necessity of the coöperation of examining boards in the investigation of medical colleges. Forgetful of the fact that the origin of examining boards is directly traceable to the fraudulent acts of medical colleges, boards authorized by law to go behind diplomas are notoriously prone to accept diplomas as *prima facie* evidence of regular and complete college work.

In connection with the above Dr. Tait calls attention to the point that rejection of a diploma obtained under fraudulent conditions, in which fraud both the graduate and the college of graduation were concerned, in one state would not prevent the seeking of recognition of the rejected diploma in new fields or other states. He also writes in relation to holders of diplomas rejected by his board:

> They apply for registration or examination in other states, where their credentials are often accepted without question. Now, were California to reciprocate with these states it would, *volens nolens*, open the door to all such medical bandits, thus defeating the purpose of the law. Surely, reciprocity under these conditions cannot be founded on justice.

In commenting on the above criticism of one of the phases of medical reciprocity I can only state that it is self-evident from his remarks that Dr. Tait is not only unfamiliar with the requirements and methods of reciprocity, but he also fails to grasp the meaning and intent of the term "reciprocity," especially so as applied to the endorsement of the medical license of one state by another state on the basis of a reciprocity agreement under the qualifications of the American Confederation of Reciprocating, Examining and Licensing Medical Boards.

Medical reciprocity is not in any sense an unlimited reciprocity. It is rather limited or restricted reciprocity, or individual reciprocity. The medical acts of nearly all of the states contain the following reciprocity provision:

> Where the requirements for license shall be deemed by the board to be equivalent to those of this act.

The recognition of the license of another state obtained (in part only) through a diploma which was not recognized by the receiving board could hardly consistently be designated an equivalent qualification, especially so if the receiving board had a record of the fraudulent nature of the qualification on which the license was obtained.

Dr. Tait evidently thinks that medical reciprocity between states is an unlimited recognition of the official acts of either board concerned in the matter of qualification for license. A careful reading of the reciprocity qualifications of the American Confederation would absolutely dispel this view.

In addition, also, the confederation has adopted itemized standards of preliminary and medical education, which, if in any sense lived up to, even in spirit, and are included in the reciprocity agreement between states, make it necessary for boards in investigating applications for endorsement not only to go behind the diploma, but also the license, and ascertain the actual quality of both.

It is possible, as in the specific case mentioned by Dr. Tait, for the possessor of a defective diploma to deceive or commit a fraud on a state in reciprocity with California and thereby obtain registration, but to assume that California or any other state, having knowledge of such fraud, would, through reciprocity, be obliged to recognize a license of this nature, is little less than an irresponsible statement. The mere application to the California board by the applicant under such conditions would furnish the defrauded board with the information on which the license could be canceled rather than endorsed.

Dr. Tait credits me with the statement that I never have had occasion to reject a diploma from a recognized medical school. I am positive there must be some error in this statement, whether made by myself or by some one else. As the executive officer of my board it is my duty and practice to go behind every diploma of whatever nature presented to the board for recognition and to examine every detail of the course and work in connection with the granting of such diploma, either in direct registration or in registration through reciprocity. It has been my duty, in connection therewith, to reject a large percentage of the diplomas presented—seldom for fraud, in nearly all cases for defective course—even when the colleges granting the diplomas have been on the approved list.

The objections to medical reciprocity by Dr. Harvey, secretary of the Massachusetts Board of Registration in Medicine, in his article in THE JOURNAL, August 25, entitled "The Impracti

bility and Interstate Reciprocity," are based wholly, as in the case of Dr. Tait, on the defective understanding of what medical reciprocity really means as practiced and a want of knowledge of the standards of reciprocity and the method of their administration. He lays special stress on the assumed danger of the lowering of the standards through reciprocity on the theory that a state with a high standard would be obliged to receive and endorse licentiates of other states having lower standards. In this connection he states that a practitioner unable to qualify in Massachusetts, for example, could go to a state having lower requirements and then return and register in Massachusetts through reciprocity.

In connection with the above he assumes that reciprocity is an unlimited and unrestricted reciprocity and eliminates the "equal requirements" provision of the law. He also fails to recognize the qualifications and itemized standards forming the agreement between states on which reciprocity is based, and which would create a most effectual barrier against all the evils he predicts.

A mathematician attempts to demonstrate his opinion and conclusion by a statement represented by figures. In his preliminary figures, however, he makes an error by recording that twice five is fifteen; he then produces a column of figures based on this error and finally shows the result and proves his conclusion in exact form. This is exactly what Dr. Harvey has done in his article, which as a literary effort, combined with high ideals and conscientious endeavor for proper methods, is beyond criticism. He is so completely in error in regard to the range and limitations of medical reciprocity, its practical meaning, its qualifications and standards and the methods of administration, that I can only compare the conclusion attempted in his article to the result attained, by the mathematician above quoted.

His attempt to prove his conclusions through the examination statistics of state boards is also equally unfortunate. For example, he compares, among other states, the percentage of failures in examination in Massachusetts with Michigan, the former state's percentage of failures being greatly in excess of that of the latter, and asks: How can an equitable reciprocity be possible under such conditions? He is satisfied that it is impossible and impracticable.

The explanation, however, is a simple one. Massachusetts admits not only the graduates of every chartered American and foreign medical college to her board examination for license, but also undergraduates, osteopaths or any others, with or without a smattering of medical education, are admitted and examined.

Michigan, on the other hand, has an exceedingly high itemized standard of preliminary and medical education, and her list of recognized medical colleges, in consequence, is a very limited one, and an applicant for examination must be a graduate of a listed college. Through her method of standard a graduate of a recognized medical college is accepted for examination, while another graduate of the same college and of the same year may be refused such examination. If a standard provision of the medical act is effective and properly administered and the list of recognized colleges meritorious, then the percentage of failures before the state board should be almost *nil*. A large percentage of failures would certainly indicate laxness in the administrative functions, for a college examines on a maximum of standard and a board examines on a minimum of the same standard. Eliminating accidents, therefore, graduates of properly accredited medical colleges should rarely fail in a state board examination. Comparing the actual requirements of Massachusetts with those of Michigan, is it to be expected or is it even possible that the percentage of failures of the latter should in any way equal the former?

Dr. Harvey is fearful that reciprocity will result in the leveling of the high-standard state with that of the low-standard state. In the possible event of a reciprocity agreement between Massachusetts and Michigan in the near or distant future, I can assure Dr. Harvey that only licentiates of his board who are graduates of colleges fulfilling in every detail the preliminary and medical standard of Michigan through her recognized college list would be accepted, and that these standards would not be in any degree lowered by such a process.

Under present conditions and standards, every licentiate of Michigan at the present day could qualify for endorsement by Massachusetts, but only a small percentage of Massachusetts licentiates could qualify for endorsement by Michigan or other state with equal standard. A fair and proper comparison of products does not tend to lower the quality of such products. The old story of the two grocery stores located far enough apart to prevent comparison or competition is in evidence. The removal of one of them to close proximity to the other will not result in the clean, tidy well-kept, well-stocked and well-managed grocery descending to the status of the other, which is an unclean, untidy, ill-kept, poorly-stocked and badly-managed affair. Just the opposite would result.

If the Massachusetts board will enter into reciprocity with some of the states having higher standards and better methods than those of Massachusetts, I can assure Dr. Harvey, who is without question a consistent and conscientious advocate of better things in medical qualifications, that the result will make possible a standard in Massachusetts which, under past and present conditions, has been impossible. B. D. HARISON.

The Anatomy of the Ear: A Criticism.

EVANSTON, ILL., Sept. 1, 1906.

To the Editor:—An article on "The History of the Mastoid Operation," by Dr. Frank Allport, in THE JOURNAL, July 14, 1906, contains certain errors regarding the anatomy of the ear that should not be allowed to pass unchallenged.

In the first place, the term middle ear is repeatedly confused with the tympanum and the two terms used as synonyms, whereas the cavum tympani is but a part of the series of cavities that make up the middle ear. The middle ear includes all the series of connected cavities extending from the opening of the Eustachian tube in the pharynx to the most remote mastoid cell.

In the second place, the antrum is frequently referred to as a mastoid cell. This is not at all the case. The antrum is quite distinct developmentally and pathologically from the so-called mastoid cells and as its scientific name, "Antrum tympanicum" implies, is a part of the tympanum as are also the recessus epitympanicus and recessus hypotympanicus.

On page 96 the following statement occurs: "Above the foramen ovale and at the angle of the inner tympanic wall and the roof or tegmen runs forward the bony portion of the Eustachian tube, its roof being continuous with that of the tympanum, aditus ad antrum and antrum." The author has confused the canal for the tensor tympani with the Eustachian tube. The bony plate forming the tegmen does not form any part of the roof of the Eustachian tube. The Eustachian tube lies directly beneath the canal for the tensor tympani.

The drawings for Figures 8, 9 and 10 are reproductions of drawings from Deaver's work on anatomy for which no credit is given, and are inaccurate and misleading in many ways as will be apparent to any one who has made a study of the relations of the parts represented. G. W. BOOT, M.D.

The Anti-Nostrum War Is Right.

SAINT LOUIS, Sept. 10, 1906.

To the Editor:—Just a word to express my endorsement of your editorial September 8. When I compare present conditions with what we have had a few years ago, the better organization, the increased *esprit de corps*, the local interest, the aggressive nostrum war and the "mute but eloquent" proof which comes to us with every issue of THE JOURNAL, I would be false to my ideas of right did I not express my appreciation.

The policy of THE JOURNAL toward the "patent-medicine" interests and those who support them is right. Its campaign in effecting local organizations and in building up state associations is right. Its successful work in giving us the best and most complete presentation of literature which we need each week is right. I know I am the better, the A. M. A. better, and THE JOURNAL better and more prosperous than ever before. "Let the galled jade wince," and let us lose no sleep.

WILLIAM PORTER.

Book Notices

UNCONSCIOUS THERAPEUTICS, or the Personality of the Physician. By A. T. Schofield, M.D., M.R.C.S. Second edition. Cloth. Pp. 317. Price, $1.50. Philadelphia: P. Blakiston's Son & Co., 1906.

The physician of to-day, perhaps more than any time in the past, is reminded of the value of the psychic element in therapeutics. That the profession takes some heed to these reminders is apparent by the appearance within two years of a second edition of Dr. Schofield's work. It covers the subject of the value to the physician of the impression that he makes consciously and unconsciously on the mind of his patient. The facts are, we might say, of universal recognition, but there are some of us in the profession who seem to need reminders of them from time to time. Perhaps some of us suffer under a disadvantage of a more correct appreciation of our limitations than others whose success is greater, with lesser qualifications. A little knowledge is said to be a dangerous thing but more is sometimes worse, as far as pecuniary success is concerned. The reading of this work ought to be profitable to very many of our profession and what Dr. Schofield says about the advisability of more attention being given to the subject of mental therapeutics in our medical instruction is very largely true. It does not follow that we should use quackish methods or deceive our patients—and the physician who does not have faith in scientific methods or who is a therapeutic nihilist is in danger of not being so very far removed from a quack. We know that we can do things for the benefit of our patients by material methods and should cherish our faith in them. Good looks and self confidence are not everything in medical practice, Mephistopheles to the contrary, notwithstanding. We mention this matter not because we think Dr. Schofield ignores it, but because in noticing a work like this one should perhaps guard against any overestimation of the special points which it so well and usefully emphasizes. The book is exceedingly readable and its occasional perusal will be interesting as well as probably useful in other ways. It is certainly full of valuable suggestions by which some of us may profit.

A NURSE'S HAND-BOOK OF MEDICINE. By J. N. Henry, M.D., Clinical Professor of Medicine, Woman's Medical College of Pennsylvania. Cloth. Pp. 268. Price, $1.50. Philadelphia: J. B. Lippincott Company, 1906.

This book comprises the lectures delivered to the nurses of the Pennsylvania Hospital during the last four years. It deals entirely with medical cases and with the care of children. The chapters on personal hygiene and the hygiene of the sick room are practical, as also is the chapter on hypodermic medication, catheterization and the use of the stomach tube. The chapter on diet contains a number of good recipes, for which the author acknowledges his indebtedness to Miss Walker and to Miss Byerly of the Pennsylvania Hospital.

A COMPEND OF OPERATIVE GYNECOLOGY, Based on Lectures in the Course of Operative Gynecology on the Cadaver at the New York Post-Graduate Medical School and Hospital, delivered by W. S. Bainbridge, M.D., Adjunct Professor of Operative Gynecology on the Cadaver, New York Post-Graduate Medical School and Hospital, etc., Compiled with Additional Notes, in Collaboration with Harold D. Meeker, M.D., Instructor in Operative Gynecology on the Cadaver, New York Post-Graduate School, etc. Cloth. Pp. 66. Price, $1.00 net. New York: The Grafton Press, 1906.

This book is intended to serve as an aid to students in operative gynecology on the cadaver. The various operations are briefly described. The book concludes with "Miscellaneous Points," in which the different forceps, needles and methods of inserting sutures, of making incisions and of controlling hemorrhage are discussed.

Marriages

WILLIAM B. NYE, M.D., West Newark, Ohio, at Newark, August 30.

B. F. ZOBRIST, M.D., Jewett, Ill., to Miss Lillie A. Apple of Keysport, Ill., September 4.

HARVEY BRINTON STONE, M.D., Baltimore, to Miss Ethel Hoffman, at Baltimore, August 27.

EDWIN A. REISENFELD, M.D., to Miss Reta Kratzenstein, both of New York City, September 4.

THEODORE A. LAFFERTY, M.D., New Baltimore, Mich., to Miss Mabel Lindahl of Detroit, August 30.

CARL WILHELM YOUNG, M.D., Philadelphia, to Miss Freida Rippelmeyer of Baltimore, August 22.

LOUIS H. RUEGNITZ, M.D., Webster City, Iowa, to Miss Grace Kilburn Meigs of Chicago, September 3.

CHARLES BURR CALDWELL, M.D., Bethany, Ill., to Miss Lydia Stevenson of Monticello, Ill., August 30.

GEORGE BURNSIDE STOREY, M.D., to Miss Grace Edna Watkins, both of Portland, Ore., September 5.

ALBERT GEORGE JENNER, M.D., Milwaukee, to Mrs. Birdie M. Weston of St. Louis, at Chicago, August 28.

MARVIN D. HUBBELL, M.D., New York City, to Miss Alma Hathaway Jones of St. Louis, September 1.

HENRY BASCOM THOMAS, M.D., Chicago, to Miss Louise Downing Wendell of Louisville, Ky., September 5.

HAL BAILEY BROWNELL, M.D. Buffalo, N. Y., to Miss Irene Helen Trowbridge of Toledo, Ohio, September 1.

ANSON LE ROY NICKERSON, M.D., Momence, Ill., to Miss Laura May Chesney of Bucyrus, Ohio, August 29.

WILLIAM PROVINCE GARSHWILER, M.D., Indianapolis, to Miss Florence Maria Province of Franklin, Ind., September 12.

Deaths

Millard P. Sexton, M.D. University of the State of Missouri, Medical School, Columbia, 1880; a member of the American Medical Association, Medical Society of the State of Missouri, Kansas City District Medical Society and Jackson County Medical Society; secretary of the Eastern Kansas Medical Society; fellow of the Kansas City Academy of Medicine; professor of diseases of the mind and nervous system in the College of Physicians and Surgeons, Kansas City, Kan.; formerly physician to State Hospital for the Insane No. 1, Fulton; superintendent of the Bonner Springs (Kan.) Sanatorium; neurologist to Bethany Hospital, Kansas City, Kan., died at St. Luke's Hospital, Denver, September 5, after a short illness, aged 50.

Edith Warner Cadwallader Crowder, M.D. Woman's Medical College of Pennsylvania, Philadelphia, 1900; formerly a member of the American Medical Association and of the Philadelphia County Medical Society, and professor of obstetrics in the Woman's Medical College of Pennsylvania, died at her home in Chicago, Aug. 18, 1906. On her marriage to Dr. Thomas R. Crowder of Chicago, in October, 1905, all her medical appointments were resigned.

Samuel A. Buchanan, M.D. Department of Medicine of the University of Pennsylvania, Philadelphia, 1893; a member of the American Medical Association, Medical Society of the State of Pennsylvania and Philadelphia County Medical Society; surgeon of the Baltimore & Ohio and Pennsylvania Systems, died in the Polyclinic Hospital, Philadelphia, August 26, from septicemia, after a prolonged illness, aged 40.

Ludwig H. Van Ghoren, M.D. Charity Hospital Medical College, New Orleans, 1876; at one time a member of the New Orleans board of health; for several terms a member of the City Council of Bay St. Louis, Miss.; mayor pro tem and a member of the board of health of the city, died at his home, August 31, after an illness of nearly a year, aged 62.

David V. Yerex, M.D. Bellevue Hospital Medical College, New York City, 1869; a prominent and influential citizen of Imlay City, Mich.; for two years member of the Lapeer County poor board, died in Harper Hospital, Detroit, August 27, four days after an operation for intestinal obstruction, from shock, without having regained consciousness, aged 61.

George Mackie, M.D. Long Island College Hospital, Brooklyn, 1874; a member of the American Medical Association, the Massachusetts Medical Society and Bristol County Medical Society; one of the most prominent and esteemed physicians of southeastern Massachusetts, died at his home in Attleboro, Mass., August 31, after a short illness, aged 56.

Abram Irvin Clarke, M.D. University of Virginia, Medical Department, Charlottesville, 1845; who served for several terms as a representative from Campbell County, Va.; some-

time president of the board of health of Lynchburg and of the Lynchburg Academy of Medicine; the oldest physician of the city, died at his home, August 31, aged 89.

Alexander K. MacLean, M.D. Toronto University, 1897, of Chicago; professor of otology, rhinology and laryngology in the Chicago Eye, Ear, Nose and Throat College, and instructor on diseases of the eye, ear, nose and throat in the Illinois Medical College, Chicago, died from acute dysentery at Battleford, Sask., August 12.

James A. Finn, M.D. Harvard University Medical School, 1875, of Roxbury, Mass.; for 28 years attending physician to the Home for Deaf Mute Catholic Children, and for many years medical examiner to the House of the Good Shepherd and St. Vincent's Infant Asylum, died in Carney Hospital, Boston, September 1, from cancer.

Orlando Miller Woodrow, M.D. Kentucky School of Medicine, Louisville, 1894; a member of the American Medical Association and of the Jackson County (Ohio) Medical Society; a practitioner of marked ability, died at his home in Wellston, Ohio, August 24, from brain abscess, after an illness of three years, aged 38.

Arthur Barlow, M.D. Memphis Hospital Medical College, of Willow Hole, Texas; a member of the Madison County (Texas) Medical Society and of the Brazos Valley Medical Society, died at Zulch, Texas, March 29, from uremic poisoning, after an illness of one week, aged 40.

Columbus G. Slagle, M.D. University of Louisville Medical Department, 1861, a member of the American Medical Association and an old resident and practitioner of Minneapolis, Minn., died at his home in that city, August 27, from heart disease, after a short illness, aged 72.

Richard Rush Hanley, M.D. Jefferson Medical College, Philadelphia, 1852; a member of the first board of supervisors of Fremont County, Iowa, and for several years justice of the peace at Tabor, died at the home of his son in Shenandoah, Iowa, August 4, aged 77.

Henry C. Thatcher, M.D. Eclectic Medical Institute, Cincinnati, 1887, of Youngstown, Ohio, a specialist on diseases of children, died at the Mahoning Valley Hospital, Youngstown, from spinal tuberculosis, September 2, after an illness of two years, aged 40.

Neilson Abeel Baldwin, M.D. Medical Institution of Yale College, New Haven, 1861, of Brooklyn, N. Y.; a member of the American Academy of Medicine, died in Seney Hospital, Brooklyn, August 29, after a surgical operation, aged 67.

Clement Clay Greene, M.D. Southern Medical College, Atlanta, Ga., 1881, formerly a widely known practitioner of Atlanta, Ga., who had been an invalid for about six years, died in his apartments in Atlanta, September 2, aged 49.

Harriet S. French, M.D. Penn Medical University, Philadelphia, 1865, said to have been the oldest woman practitioner in Philadelphia, died at her home in that city, from heart disease, following a cerebral hemorrhage, September 5, aged 82.

Daniel Ream, M.D. Eclectic Medical Institute, Cincinnati, 1867; state senator in 1872, and formerly sheriff and coroner of Siskiyou County, Cal.; for more than 50 years a practitioner of Yreka, died at his home in that city, September 1.

Isidore Fregeau, M.D. Ecole de Médécine et de Chirurgie, Montreal, 1861; for one term a member of provincial parliament from Sherbrooke County, died at his home in Sherbrooke, Quebec, September 2, aged 72.

Ira W. Johnson, M.D. Mobile (Ala.) Medical College, 1906; a member of the Shelby County Medical Society, died at his home in Calera, Ala., August 5, from the effects of an overdose of tincture of aconite root, aged 25.

John Henry Weaver, M.D. Department of Medicine of the University of Pennsylvania, Philadelphia, 1873, of Altoona, Pa., died at the home of his son in Greensboro, Md., from cerebral hemorrhage, August 18, aged 75.

Ernest Woolfolk, M.D. University of Virginia Medical Department, Charlottesville, 1876, died at his home in Thornhill, near Lahore, Va., August 25, from disease of the stomach, after a long illness.

Benjamin E. Hays, M.D. Bellevue Hospital Medical College, New York City, 1870, of New York City, a veteran of the Civil War, died in the Presbyterian Hospital, New York, August 19, aged 69.

James A. Leech, M.D. Columbus (Ohio) Medical College, 1886, workhouse physician of Columbus, Ohio, died at the home of his sister in Cambridge, Ohio, from an overdose of morphin, August 29, aged 43.

Alexander Thomasson Dozier, M.D. Louisville Medical College, 1849, who had given up practice for a number of years, was accidentally burned to death in Auburn, Cal., Dec. 25, 1905, aged 84.

William B. Watkins, M.D. University of Louisville Medical Department, 1857, one of the most prominent practitioners and citizens of Clay County, Miss., died at his home in Big Springs, August 31.

Albert Whitlock, M.D. Pulte Medical College, Cincinnati, 1878, died at his office in Wichita, Kan., August 31, from hemorrhage of the lungs, after an illness of about four months, aged 50.

Edward J. Chapman, M.D. Rush Medical College, Chicago, 1871, died at his home in Missouri Valley, Iowa, August 28, from locomotor ataxia, after an illness of four years, aged 61.

Henry Austin Gould, M.D. 1874, a former practitioner of Hammond, Wis., died in Minneapolis, August 7, from cholera morbus and nephritis, after an illness of two days, aged 82.

Andrew Klingberg, M.D. Rush Medical College, Chicago, 1869, died at his home in Osage City, Kan., August 10, from nephritis, after an illness of about three years, aged 67.

J. Thompson Morton, M.D. Medical College of Georgia, Augusta, 1900, of Keysville, Va., died from typhoid fever in a hospital in Richmond, Va., August 30.

Harry L. Helper, M.D. Department of Medicine of the University of Pensylvania, Philadelphia, 1888, died at his home in Reading, Pa., August 18, aged 43.

Charles E. Howland, M.D. Eclectic Medical Institute, Cincinnati, 1865, died at his home in Adrian, Mich., September 1, after a lingering illness, aged 75.

Henry F. Graetzel, M.D. Baltimore University School of Medicine, 1893, died at his home in Baltimore, August 30, from disease of the stomach, aged 76.

Charles W. Musgrove, M.D. Jefferson Medical College, Philadelphia, 1879, died at his home in McEwensville, Pa., July 29, after a long illness, aged 62.

Justus Beebe (Examination, Michigan), died at his home in Wixom, Mich., April 22, from angina pectoris, after an illness of three days, aged 68.

John Jay Higgins, M.D. College of Physicians and Surgeons in the city of New York, 1850, died at his home in New York City, August 28, aged 79.

James Ambrose Osborne, M.D. Hahnemann Medical College and Hospital, Chicago, 1897, died recently at his home in Harmony, Pa., aged 35.

Queries and Minor Notes

ANONYMOUS COMMUNICATIONS will not be noticed. Queries for this column must be accompanied by the writer's name and address, but the request of the writer not to publish name or address will be faithfully observed.

MERCURY SOZOIODOLATE.

KWANG JU, KOREA, Aug. 2, 1906.

To the Editor:—Please tell me what Lengfeld's solution is. How is it used in syphilis? J. W. NOLAN.

ANSWER.—Probably our correspondent refers to a solution of mercury sozoiodolate recommended by Dr. Garceau of San Francisco in an article published in the *Journal of Cutaneous Diseases*, June and July, 1906, and prepared for him by F. Lengfeld, chemist. This solution contains 0.5 per cent. of mercury as sozoiodolate held in solution by sodium iodid. This proportion is advantageous in that one can calculate the amount of mercury, since each twenty minims contains 1/10 of a grain of mercury. The sozoiodolate of mercury dissolves in 500 parts of water, but is readily soluble in solutions of sodium chlorid or of other halogen salts. It is a fine yellow powder which should dissolve with slight turbidity to the extent of 0.5 gm. (7½ gr.) in 30 c.c. (one ounce) of water on the addition of 1.5 gm. (22½ gr.) of comon salt. The following formula is given by Hager (Handbuch der Pharmaceutischen Praxis) as suitable for hypodermic injection:

℞.	Hydrargyri sozoiodolatis	gr. xii	8
	Potassi iodidi	gr. xxiv	1 6
	Aquæ dest.	℥iiss	10

M. Sig.: For subcutaneous injection.

To produce the strength specified by Garceau we need a solution containing 1,556 per cent of sozoiodolate. Using the same relative proportion of sodium iodid as of potassium iodid in the above

formula we arrive at the following formula, which must closely represent the formula of Garceau in the article referred to:

℞. Hydrargyri sozoiodolatis	gr. 2.4	156
Sodii iodidi	gr. 4.8	312
Aquæ dest.	gr. 150	10

Sozoiodolate of mercury, a mercury salt of di-iodo-paraphenol-sulphonic acid, $C_6H_2.OH.I_2.HSO_3$, is to be obtained of the various dealers in chemicals. Twenty minims of the solution are injected into the buttock with the usual precautions for asepsis. Swabbing with ether may be used to cleanse the skin and at the same time produce a mild anesthesia. A trochar needle is quickly plunged into the gluteus muscle, the trochar removed, and, if there is no oozing from the wound, the barrel of the syringe is attached to the needle and the injection made. Massage of the site of injection relieves pain materially and tends to prevent nodulation.

COMPARATIVE VALUES OF SILVER PREPARATIONS.

JEFFERSON CITY, MO., Aug. 21, 1906.

To the Editor:—Will you please give in your "Queries and Minor Notes" the relative and comparative germicidal value of "protargol," "argyrol," and "nargol," as found by disinterested parties, by both laboratory and clinical tests? Argyrol, I know, is less irritating, but has it the same germicidal properties, grain for grain, when compared with protargol? J. A. HILL.

ANSWER.—In the discussion on a paper by Myles Standish in THE JOURNAL, June 17, 1904, page 1854, the comparative values of silver nitrate, protargol and argyrol in the treatment of purulent conjunctivities are considered. The consensus of opinion was that the effectiveness of protargol and argyrol is about the same, except in gonorrheal opthalmia, when the cornea is involved, in which case better results seem to be obtained with protargol. It has been assumed by S. Fränkel (Arzneimittel-Synthese, 2d edition, p. 611) that the germicidal value of freely soluble compounds of silver with albumins depends on the percentage of silver which they contain. The recent report (see abstract, p. 398, this issue) of Marshall and Macleod Neave to the therapeutic committee of the British Medical Association, however, indicates that the bactericidal power has no definite relation to the percentage of silver since they found that argyrol, which is said to contain 25 per cent. of silver, produced very little bactericidal effect, while nargol, containing 10 per cent., and protargol, containing 8 per cent., were strongly bactericidal, and of about equal value.

LACTOPHENIN AND ASPIRIN.

CORONADO BEACH, CAL., Aug. 24, 1906.

To the Editor:—Will you kindly publish in THE JOURNAL some reliable information regarding lactophenin and aspirin, especially as to their pain relieving properties. The literature I have received from the proprietors of these preparations is written by obscure men, and, as it is uniformly favorable, it is, in my opinion, unreliable. X. Y. Z.

ANSWER.—Lactophenin is chemically very similar to phenacetin. While phenacetin is acetparaphenetidin, lactophenin is lactparaphenetidin; while phenacetin contains an acetic acid group, lactophenetidin contains a lactic acid group, and because of this lactic acid group, the compound is more soluble than phenacetin. Therapeutically also it is similar to phenacetin, and possibly it acts somewhat more energetically because of greater solubility. Aspirin is acetyl-salicylic acid and is produced by heating together salicylic acid and acetic anhydrid or chlorid. It is not changed in the stomach, but is decomposed in the intestine, forming a salicylate. It may be regarded as a useful substitute for salicylic acid, possessing essentially the same sphere of therapeutic action, with certain advantages over the older drug, the chief being that it is not decomposed in the stomach, and hence is not so likely to give rise to gastric irritation. H. C. Wood says: "It has been used by good clinicians with asserted good results, to depress the temperature in fevers, and has been highly praised as a means of subduing pain in migraine, neuralgia, and even in the fulgurant agonies of locomotor ataxia." Some by-effects have been reported by O. Meyer (*Deutsch. med. Wochnschr.*, vol. xxxix, No. 7) and Winckelmann (*Muench. med. Wochnschr.*, vol. l. No. 42). R. Freund reports three cases of drug eruptions occasioned by it (*Muench. med. Wochnschr.*, vol. lii, No. 15, April 11, 1905). It is controlled by patent in the United State, but not elsewhere. The consequence is that in this country the use of a very valuable therapeutic agent is restricted by its unnecessarily high price as compared with the prices in foreign countries, where it is not protected by patent.

A STRYCHNIN TOXIN.

TOLEDO, O., Sept. 6, 1906.

To the Editor:—Kindly tell me whether there is a toxin which produces the following train of symptoms: During our warmest weather a man had, for a week, so much soreness along the entire length of the spinal column that in the morning he had difficulty in getting out of bed; but after he had forced himself to get up, and had moved around for a time, he had, during the rest of the day, only an aching sensation in his back. After a warm bath in the morning he began to perspire profusely, felt a little nauseated, and in about half an hour began to have tonic muscular contractions in the right arm, and in the course of an hour the contractions had involved all of the voluntary muscles of the body, excepting those of the face. The contractions would last as long as a half minute sometimes, but generally were of shorter duration. The flexors and extensors seldom contracted at the same time; the forearm, for example, would be very strongly flexed on the arm for a while, when those muscles would let go, and the extensors would suddenly just as powerfully straighten the arm, making him strike the back of the hand on the floor until his hands were bruised by the blows. He was entirely rational and conscious all of the time, and when an arm or leg or any part of the body was in the spasm, would want it rubbed as hard as a strong man could rub it. The muscles of the arms, legs and back seldom contracted at the same time, though they were sometimes in spasm at the same time. Opisthotonos was often very marked; and he complained occasionally of the tongue drawing just like his arms. The muscles might all remain quiet for five minutes, and again might contract a half dozen times in three minutes. The day that the convulsions came on was one of the warmest of the season. He was on the floor, and said that ice rubbed along the spinal column was very grateful to him. One grain of morphin given hypodermically within an hour did not relieve the contractions, but chloroform did so. After the first day ½ grain of morphin morning and evening controlled most of the contractions, though any movement of the body was likely to cause momentary contractions some place. There were no eye symptoms, and until the end of the third day he had no temperature; then for two days it was 100, then went to normal, where it remained. Now, at the end of two weeks since the attack, all of the muscles, except the large muscles of the back, are free from pain and soreness; but any use of the back muscles causes him pain about as they did the week before the spasms of the muscles came on. Thinking that the man was being poisoned from some source, and most likely from the intestinal tract, he was given, all through his sickness, 15 grains of acetosone every twenty-four hours. Drs. McVetey and Kirkley saw the man in consultation, and if there is a toxin which will cause such symptoms, we will be obliged if you will tell us what it is, and where we can find it described. J. L. TRACY.

ANSWER.—Strychnin-like substances have been isolated from decomposing organic mixtures, especially from moldy corn meal. The substance obtained from corn meal is really a mixture of ptomains which give color reactions similar to strychnin, but the physiologic action of some of them is very different from strychnin. Selmi was able to extract from corn meal a base which produced tetanic convulsions and also gave reactions similar to strychnin, but differed from it in the fact that it could not be extracted with ether. A base obtained by Gautier and Etard from decomposing flesh produces tetanic convulsions toward the end of its action (Vaughan and Novy, "Ptomains and Leucomains," 3d edition, 1896, p. 316). Tetanin has been isolated by Brieger from cultures of tetanus bacilli (Ibid., p. 398), and produces most of the symptoms of tetanus. C. P. Howard states (*Amer. Jour. Med Sci.*, February, 1906), that Ewald has isolated a peptotoxin from the urine in cases of tetany. In cases like the one described, it is probable that the toxin is produced in the alimentary canal, provided of course, that the case is one of toxemia. Care should be taken in making the diagnosis to distinguish from strychnin poisoning, tetanus, possibly hysteria and tetany. For the diagnosis of the latter see Howard's article.

THE PHYSICIAN'S LIBRARY AND THE FILING OF CLIPPINGS FROM JOURNALS.

WHITEWRIGHT, TEX., Aug. 31, 1906.

To the Editor:—To the suggestions embodied in your reply to Dr. E. A. Hines in THE JOURNAL, Aug. 25, 1906, allow me to add that I find it easy to preserve and find all my medical literature. To do this it is necessary only to procure an ordinary straight punch, some stiff cardboard, and cheap shoestrings. I punch a pair of holes at the top and two at the bottom of the back of each number, and file it on the loops of shoestrings and tie. I string on and tie each number as it comes from the mail, and when the index arrives I put it on, and then the last cardboard for the back. My weekly medical literature constitutes by far the most important part of my library. For instance, after reading the article in THE JOURNAL, Aug. 18, 1906, on "The Relations of Gastric Acidity to Gastric Symptoms," I immediately turned to my text-book on "Diseases of the Stomach," now two or three years old, and annotated on the margin: "J. A. M. A., Aug. 18, '6, p. 496." There is room along the margins for indices of the important current articles for four or five years. Using this method I do not mutilate my weekly periodicals.
S. H. LANDRUM, M.D.

GALVA, KAN., Aug. 27, 1906.

To the Editor:—Noticing the query of Dr. Hines and your answer in THE JOURNAL, Aug. 25, 1906, page 609, I should like to recommend a method I have used for a number of years and found very satisfactory. It was given me by one of my instructors in college, Dr. Hickey, of Denver. It consists in making a note on the margin

of the page treating of that particular subject in the text-book most often referred to, of the name or initials, volume and page of the journal in which the article to be referred to is to be found. For example, in an old edition of Osler, under etiology of smallpox, opposite the sentence, "The nature of the contagion of smallpox is still unknown," I have this reference: J. A. M. A., vol. xl, pp. 1221 and 1233. This refers to Dr. Councilman's report of the discovery of the germ of smallpox. By this method physicians can keep their text-books constantly up-to-date. C. D. WEAVER.

DURAND, ILL., Sept. 4, 1906.

To the Editor:—In reply to your correspondent in the issue of August 25, I would suggest a plan that I have followed for several years of indexing my journal reading. It is simple, practical, and requires but a very short time to make an entry, and although it sometimes takes a little time to find the reference if it is far back and there is much uncertainty as to when I read the article, still it serves the purpose admirably. I procure a small blank book and keep it convenient to my reading desk. When I read an article that I may want to refer to again I enter the title in my blank book in black ink, under that the name of the author and the journal, giving volume number and date in red ink. The following is a sample, letting italics indicate red ink:

Some Phenomena of Tuberculosis Infection.
Wm. Porter, A.M., M.D.
J. A. M. A., xlvi, 21, 5-26-'06, p. 1573.

If some time later I wish to look up the article by title I run my eye over the pages, observing only that in black ink; if by the author, I carry my eye over the red ink only. When a volume of each journal is complete I tie it in a bundle, attach a tag on which is written the name of the journal, the volume and the dates of the first and last numbers, and shelve them where they are convenient of access. Thus each volume of a journal becomes a part of my library, and almost as easy to consult as a bound volume.

GEORGE M. HAINES.

The Public Service

Army Changes.

Memorandum of changes of stations and duties of medical officers, U. S. Army, week ending Sept. 8, 1906:

Loving, R. C., and Whaley, A. M., asst.-surgeons, granted leave of absence for one month and authorized to return to the United States via the Suez Canal on one of the transports to leave Manila, P. I., for New York City, on or about Sept. 1, 1906.

Boyer, Perry L., asst.-surgeon, left Camp of Instruction, Austin, Texas, with 2d Battalion Field Artillery, marching to Fort Sam Houston, Texas.

Fife, J. D., asst.-surgeon, reports departure from Fort Slocum, N. Y., on detached duty with recruits, and on arrival at Boise Barracks, Idaho, to avail himself of seven days' leave of absence.

Bartlett, C. J., asst.-surgeon, relieved from further duty at Camp of Instruction, Murray, Washington, and ordered to report to the commanding general, Department of California, for duty.

Havard, Valery, asst.-surgeon general, on adjournment of the Association of Military Surgeons, Buffalo, N. Y., will proceed to Camp Roosevelt, Mount Gretna, Pa., for observation of the medical department in the field and inspection of new sanitary methods and appliances in use at the camp; on the completion of this duty he will proceed to Camp of Instruction at Fort Benjamin Harrison, Ind., for similar duty, and then return to his proper station.

Mason, C. F., surgeon, will proceed to Camp Chickamauga, Ga., to observe the methods of instruction and organization of the medical department in the field, and to inspect the new sanitary methods and appliances in use at the camp; on the completion of this duty he will return to his proper station.

Darnall, C. R., asst.-surgeon, will proceed to the Camp of Instruction at Fort Riley, Kan., for observation of the methods of instruction and the organization of the medical department in the field, and to inspect the new sanitary methods and appliances in use at the camp; on the completion of this duty he will return to his proper station.

Phalen, J. M., asst.-surgeon, left Camp of Instruction, near Austin, Texas, en route to station, Fort Logan H. Roots, Ark.

Miller, E. W., asst.-surgeon, left Camp of Instruction near Austin, Texas, with the 1st U. S. Cavalry, en route to station, Fort Clark, Texas.

O'Reilly, R. M., brig.-gen., reappointed Surgeon-General, U. S. Army, for the period of four years, from Sept. 7, 1906.

Arthur, W. H., surgeon, granted ten days' leave of absence.

Purnell, H. S., asst.-surgeon, leave of absence extended one month.

Byars, C. R., cont.-surgeon, returned to duty at Jefferson Barracks, Mo., from practice march with 3d Squadron, 9th Cavalry.

Stone, F. P., dental surgeon, left Camp Mabry, Austin, Texas, for Fort Sam Houston, Texas.

McCallum, F. M., cont.-surgeon, granted leave of absence for one month, to take effect on his relief from his present duties.

Carpenter, Alden, dental surgeon, left Vancouver Barracks, Wash., and arrived at Camp Tacoma, Wash., for the purpose of attending to the necessary dental work of officers and enlisted men at that camp.

Jordan, E. H., left Denver for San Francisco to take transport to sail for Philippine Islands, Sept. 5, 1906.

Whinnery, J. C., dental surgeon, left Fort Flagler, Wash., and arrived at Vancouver Barracks, Wash., for duty.

Daywalt, cont.-surgeon, sick leave of absence extended one month.

Leeper, J. F., cont.-surgeon, returned to duty at Fort Duchesne, Utah, from Camp of Instruction near Fort D. A. Russell, Wyoming.

Chase, A. M., cont.-surgeon, left Camp of Instruction near Austin, Texas, with 1st Cavalry, en route to his station, Fort Reno, Oklahoma.

Stone, F. P., dental surgeon, granted fourteen days' leave of absence.

Van Kirk, H. H., cont.-surgeon, left Fort Sill, Okla., on leave of absence for one month.

Thorp, C. W., cont.-surgeon, returned to duty at Fort Ethan Allen, Vermont, from leave of absence.

Wolven, F. H., dental surgeon, left Fort Terry, N. Y., and arrived at Fort Trumbull, Conn., for duty.

Navy Changes.

Changes in the medical corps, U. S. Navy, for the week ending Sept. 8, 1906:

Medical Director R. A. Marmion, to be placed on the retired list of officers of the navy, Sept. 6, 1906, in accordance with the provisions of Section 1444 of the Revised Statutes.

Surgeon L. W. Curtis, detached *Pensacola*, Naval Training Station, San Francisco, etc.; to home and wait orders.

Surgeon C. E. Riggs, detached Navy Yard, New York, N. Y., etc.; to *Pensacola*, Naval Training Station, San Francisco, and additional duty Naval Training Station.

Asst.-Surgeon P. T. Dessez, detached *Severn*, to home and wait orders.

Asst.-Surgeon J. O. Downey, to Naval Hospital, Philadelphia.

Passed Asst.-Surgeon C. N. Fiske, detached *Marblehead*, when out of commission; to *Yorktown*.

Passed Asst.-Surgeon, G. M. Mayers, detached Navy Yard, Washington, D. C., etc.; to *Marietta*.

Acting Asst.-Surgeon E. P. Huff, appointed as acting assistant surgeon in the navy from Aug. 31, 1906.

Public Health and Marine-Hospital Service.

List of changes of station and duties of commissioned and non-commissioned officers of the Public Health and Marine-Hospital Service for the seven days ending Sept. 5, 1906:

Sawtelle, H. W., surgeon, directed to report to chairman of board of medical officers, Washington, D. C., September 4, for physical examination.

Stoner, G. W., surgeon, directed to proceed to Washington, D. C., for special temporary duty, on completion of which to rejoin station.

Mead, F. W., surgeon, directed on expiration of leave of absence, to proceed to Savannah, Ga., and assume command of service at that port.

Carrington, P. M., surgeon, granted three days' leave of absence from Sept. 3, 1906, under provisions of Paragraph 189 of the Service Regulations.

Williams, L. L., surgeon, leave of absence granted for one month and fifteen days, from July 16, 1906, amended to read nineteen days from July 16, 1906, and five days from Aug. 19, 1906, in all twenty-four days.

Guiteras, G. M., surgeon, directed to rejoin station at Cairo, Ill.

Hough, J. Spencer, acting asst.-surgeon, granted leave of absence for thirty days, to be taken on or about Oct. 15, 1906.

Thomas, A. M., pharmacist, granted leave of absence for fifteen days from Sept. 9, 1906.

BOARDS CONVENED.

Board of officers was convened to meet at the Bureau, Washington, D. C., Sept. 4, 1906, to determine whether or not the physical condition of Surgeon H. W. Sawtelle is such as to entitle him to "waiting orders." Detail for the board: Asst.-Surgeon General J. M. Eager, chairman; Asst.-Surgeon General J. W. Kerr, Surgeon L. L. Williams, recorder.

Health Reports.

The following cases of smallpox, yellow fever, cholera and plague have been reported to the Surgeon General, Public Health and Marine-Hospital Service, during the week ended Sept. 7, 1906:

SMALLPOX—UNITED STATES.

Louisiana: New Orleans, Aug. 18-25, 7 cases.
New York: New York, Aug. 18-25, 3 cases.
Ohio: Cincinnati, Aug. 24-31, 1 case.
Pennsylvania: Sunbury, July 4, 1 case.
Texas: Houston, Aug. 18-25, 1 case.

SMALLPOX—FOREIGN.

Africa: Cape Town, July 14-28, 30 cases.
Canada: Toronto, Aug. 18-25, 1 case.
France: Paris, Aug. 4-11, 7 cases.
Great Britain: Liverpool, Aug. 18-25, 2 cases.
India: Bombay, July 24-Aug. 7, 3 deaths; Calcutta, July 14-28, 21 cases; Karachi, July 24-Aug. 5, 7 cases, 2 deaths; Madras, July 21-Aug. 3, 5 deaths; Rangoon, July 14-21, 2 deaths.
Japan: Kobe, July 14-21, 1 case.
Russia: Moscow, Aug. 4-11, 2 cases, 2 deaths; Odessa, Aug. 4-18, 8 cases; St. Petersburg, July 28-Aug. 4, 1 case, 1 death.
Siberia: Vladivostok, July 14-21, 2 cases, 1 death.

YELLOW FEVER.

Cuba: Havana, Sept. 3-8, 1 case, 1 death.
Mexico: Merida, Aug. 12-25, 10 cases, 5 deaths; Vera Cruz, Aug. 19-25, 1 case.

CHOLERA.

India: Bombay, July 24-Aug. 7, 207 deaths; Calcutta, July 14-28, 19 deaths; Madras, July 21-27, 10 deaths.

PLAGUE—INSULAR.

Honolulu: Hawaii, Aug. 30, 1 death.

PLAGUE—FOREIGN.

Arabia: Djeddah, July 16-22, 11 cases, 11 deaths.
Egypt: Alexandria, Aug. 4-9, 8 cases, 7 deaths; Suez, Aug. 3-9, 4 cases, 4 deaths.
India: General, July 7-14, 450 cases, 346 deaths; Bombay, July 24-Aug. 7, 69 deaths; Calcutta, July 14-28, 17 deaths; Karachi, July 22-Aug. 5, 16 cases, 16 deaths; Rangoon, July 14-28, 277 deaths.
Japan: Formosa, July 21-31, 20 cases, 29 deaths.

Society Proceedings

COMING MEETINGS.

American Electro-Therapeutic Association, Philadelphia, Sept. 18-20.
Am. Assn. of Obstetricians and Gynecol., Cincinnati, O., Sept. 20-22.
Medical Association of District of Columbia, Washington, Oct. 2
Idaho State Medical Society, Lewiston, Oct. 4-5.
Colorado State Medical Society, Denver, Oct. 9-11.
Delaware State Medical Society, Wilmington, Oct. 9.
Medical Society of Virginia, Charlottesville, Oct. 9-11.
Kentucky State Medical Association, Owensboro, Oct. 10-12.
Vermont State Medical Society, Barre, Oct. 11 12.
American Association of Railway Surgeons, Chicago, Oct. 17-19.

WESTERN SURGICAL AND GYNECOLOGICAL ASSOCIATION.

Sixteenth Annual Meeting, held at Salt Lake City, Utah, Aug. 30-Sept. 1, 1906.

The President, DR. M. L. HARRIS, Chicago, in the Chair.

(*Continued from page 788.*)

Gastrointestinal Ulcer.

DR. H. D. NILES, Salt Lake City, stated that ulcer is not only a producer of symptoms, as a primary lesion, but may be the antecedent of many grave complications and sequelæ; it might indirectly cause a great variety of puzzling symptoms, which the surgeon must try to interpret correctly. So long as physicians think of gastrointestinal ulcer simply as a theoretical possibility, of rare occurrence, and of obscure pathology, the symptomatic treatment will prevail, and unsatisfactory results will follow. As soon as physicians learn to appreciate that ulcer is not only a real pathologic entity, but that it is the most common of all gastrointestinal lesions, they will find themselves very near the true explanation of many obscure chronic abdominal symptoms, and will be prepared to formulate a timely and rational treatment for the pathology that produces these symptoms.

DISCUSSION.

DR. ANDREW C. SMITH, Portland, Ore., said that gastrointestinal ulcer is a common pathological entity that should be considered in all conditions of chronicity of abdominal symptoms.

DR. W. W. GRANT, Denver, said that gastroenterostomy for ulceration of the stomach and intestine, particularly the duodenum, and for obstructive lesions of these parts, is now one of the most common and conservative of modern operations. Like most new surgical triumphs, it is likely to be abused somewhat before it reaches its proper status as a surgical procedure. Surgeons should be a little more conservative in the surgical treatment of these conditions, and not until there are manifest evidences of ulcer, such as persistent ulceration or obstruction is it desirable to perform this operation. A large number of these cases are attended with profuse acute hemorrhage. They are the chronic digestive cases, in many of which the hemorrhage is not manifested; but the investigations of Rosenthal and Frederick show that in these cases there is occult hemorrhage. This is shown chiefly by microscopic examination of the contents of the stomach and of the fecal discharges. When this condition exists and persists, operation is demanded. Operation, however, should not be undertaken until medical treatment and other non-surgical measures have been given reasonable trial.

DR. B. B. DAVIS, Omaha, said that in a number of instances of ulcer of the stomach, duodenum, and in the region of the pylorus, he has been able to get a definite idea as to the location of the ulcer by distending the stomach, whereas before this he was absolutely at sea. Whenever there is suspicion of ulcer, either of the stomach, the duodenum, or intestinal tract lower down, the physician should resort to systematic daily examinations of the stools for blood. In a number of instances he has been able to arrive at a definite idea in this way, whereas, if he had resorted to gross inspection simply, he never would have suspected what existed.

DR. JOHN C. MORFIT, St. Louis, said there was nothing that he admired more than radical conservatism. He liked to see a man who could use his head without using his knife, but who never used his knife without using his head. The greatest point of gastrointestinal ulcer is not the operation; it is the diagnosis. Gastroenterostomy has been so perfected that it is now a comparatively simple procedure, and for that reason men with surgical tendencies might operate sometimes because they could, and not because they ought to. He would hesitate to operate on a case of gastric ulcer until the patient was seen by a good internist and a good neurologist, on account of the elements of hysteria and neurasthenia being connected with the case.

DR. E. F. ROOT, Salt Lake City, said it ought to be made plain to the general practitioner that ulceration of the bowel is very much more frequent than was previously supposed. General practitioners, men who were not doing very much surgery, are liable to have a very vague idea of what is going on within the abdomen. If gastrointestinal ulcer is diagnosed, it should be dealt with surgically as soon as possible.

DR. R. C. COFFEY, Portland, said that these ulcers are the seat of cancer in a very large proportion of cases. He has also learned that ulcer and cancer occur in the same location, usually, where the gastrointestinal contents are detained for some reason or other. A frequent seat for cancer is the cecum. Fecal matter is detained here for a while, then it is passed over until it reaches the sigmoid. Very rarely is cancer found at the splenic flexure, at the hepatic flexure, or in the transverse colon. The next frequent point for ulcer and cancer is the sigmoid; next the rectum.

Surgical Treatment of Splanchnoptosis.

DR. B. B. DAVIS, Omaha, presented a brief statement of the anatomic changes found, and described the various surgical procedures which have been proposed and carried out for the relief of this condition. He gave a résumé of his own operations.

Late Phlebitis Following Clean Abdominal Operations.

DR. W. W. GRANT, Denver, presented that form of phlebitis culminating in the veins of the legs and which is known to occur most frequently about two weeks after simple, aseptic abdominal operations, without being preceded by faster pulse, elevation of temperature, pain or any indication at present known of its advent. In the great majority of cases it culminates in the vessels of the left leg, no matter where the incision is made. He quoted at length from the literature, and showed that the etiology of this condition is still very hazy. His belief is that the cause of phlebitis of the epigastric, iliac, femoral, saphenous and tibial vessels, occurring late after a perfectly aseptic operation, and clean, prompt healing of the wound, is probably not septic. The specific cause is unknown. In the absence of convincing or pathological evidence, and in the face of profound surgical skepticism, it is not rational in the best and cleanest days known to surgery to assume infection that was devoid of satisfactory evidence. It is exceedingly difficult, in fact quite impossible, to reconcile the facts with the recumbent position, the simple ligature, or injury to small veins, in a distant field on the opposite side of the body, although admitting that infection might not come from the site of operation. The author believes there is a general condition affecting the composition of the blood that might be caused before operation, which is an essential factor in the cause of thrombo-phlebitis in these cases. A careful scrutiny of patients should be made before operation and an examination of the blood made before and after operation. If the patient is chlorotic and anemic, or the conditions not satisfactory, the health should be improved, if delay is permissible, by the administration of iron and acids, and metabolism should be improved by a suitable food supply, while specific or constitutional affections should receive just consideration.

DISCUSSION.

DR. A. C. STOKES, Omaha, said that there was referred to him an anemic, pale woman, 56 years of age, in whom beginning carcinoma of the rectum was suspected. She was given an anesthetic for the purpose of examination. A speculum was introduced well up into the rectum without producing any great amount of traumatism to the mucous membrane. After this the patient was returned to bed and kept there on account of her anemic condition. Four days later she developed phlebitis. He was unable to say whether the phlebitis was due to the traumatism of the rectum or to the anesthetic. He thought it was the anesthesia which produced a general toxemia in some cases, and this might produce in turn a chemical change in the blood, which at times might produce, in connection with rest

in bed, venous stasis, etc. He is inclined to believe that the great majority of these cases are septic, and whenever he sees a case of phlebitis he always searches for a focus of infection.

DR. HARRY M. SHERMAN, San Francisco, cited one case of phlebitis of the left femoral vein and mentioned two others occurring in the practice of other surgeons, all three operations having been done by different men and each operation being different.

DR. LEONARD FREEMAN, Denver, pointed out that femoral phlebitis occurs in connection with appendicitis even when no operation is done. He has seen a double femoral phlebitis result in a case of appendicitis within a few days, with the patient not lying in bed. Phlebitis occurs in connection with other things where there is no question about septic infection. For instance, in an ordinary Pott's fracture of the right leg, and in one case of simple fracture, left femoral phlebitis resulted in the course of a week or two. In another case of fracture of the left patella a right femoral phlebitis developed and a left phlebitis afterward. These could not be explained by infection.

DR. E. S. WRIGHT, Salt Lake City, recalled his first case of phlebitis following an operation for appendicitis. The appendix had ruptured and had filled the pelvis with pus. He drained through the cul-de-sac and the vagina became partially obliterated. Possibly the traumatism incident to the introduction of the speculum in this case contributed to the result. The patient recovered from the phlebitis without any particular treatment.

DR. J. CLARK STEWART, Minneapolis, said the general impression among pathologists is that thrombosis is in many instances of bacterial origin. The term sepsis is a *bête noir* for the surgeon, and naturally surgeons refuse to accept sepsis as a cause of anything in connection with what they are doing. If the term bacteriemia is used they would be, perhaps, more willing to accept it. It would seem that many cases, if not all, of thrombosis are due to bacteriemia. Pus bacteria enter the blood from unknown sources and give rise to such diseases as osteomyelitis. There is only one way to do, and that is to have blood cultures made of the cases that have femoral thrombosis and see whether or not they have bacteria in the blood. The presence of bacteria in the blood does not necessarily mean sepsis in a surgical sense, as a patient might have a certain number of bacteria circulating in the blood without clinical manifestations. It is only when some point of least resistance occurs that the lesions are localized.

DISCUSSION.

DR. ANDREW C. SMITH, Portland, Ore., recalled three cases of phlebitis from three different types of operations in his own work. None of them was immediately septic, but each of them was remotely septic. He attributed each case to the catgut, and thought the slight sepsis present was due to late disintegration of the chromic catgut and the absorption of toxins from that.

DR. UNION WORTHINGTON, Salt Lake City, did not believe that trauma is a cause of phlebitis. Whenever he has a case of phlebitis it is his practice to look for infection. The fact that phlebitis more frequently occurs in the left leg than in the right has never been satisfactorily explained to him.

DR. GRANT expressed the belief that blood examinations by bacteriologists and pathologists would have to settle the question. Pathologists have not been given a good chance thus far because most of the patients recover; but the rather dogmatic statement of Murphy that recumbency is the cause is not a tenable one.

(To be continued.)

BRITISH MEDICAL ASSOCIATION.

Seventy-fourth Annual Meeting, held in Toronto, Ontario, Aug. 21-25, 1906.

(Continued from page 800.)

SECTION ON STATE MEDICINE.

This section, which met in the new science building and was presided over by Dr. Frederick Montizambert, Ottawa, Ontario, had a most attractive program, divided by days into symposia on "Tuberculosis," "Control of Water and Milk Supplies," "Hygiene of the Home and Public Institutions" and "International Sanitary Protection."

Problems of Water Supply.

DR. HIBBERT W. HILL, assistant director of the health laboratories, Minneapolis, prepared a paper on "Water Supplies from a Sanitary Standpoint," which was read in his absence by Dr. F. F. Wesbrook. He advised the continuous supervision of the water supply in order to forestall outbreaks of typhoid fever. He expressed the advice that in municipalities where large quantities of water were used filtration was the only practicable method of artificial purification. The English filter bed may be compared to a water-tight reservoir, suitably underdrained and filled to the depth of five or six feet with proper filtering material. The water flows evenly and slowly over the surface of the sand, leaving most of its suspended material on the top. The rate of filtration by this method of slow filtration averages from about two to two and a half million gallons per acre per day, and, of course, a large filter costs less in proportion than a small one. A filter one acre in extent would cost about $60,000. The essayist urged the repeated examination and treatment of water supplies which have been allowed to become polluted. In speaking of the purification of water he discussed the methods of filtration, distillation and aeration, giving special attention, as above stated, to the "slow sand" or English filter bed. In mechanical filtration a small quantity of some coagulant, preferably aluminium sulphate, is added to the sand before it reaches the water. The aluminium hydrate thus formed becomes a most important constituent of the filter, for without it its bacteriologic efficiency is very low. Water is then added to the filter, which is a tank or cylinder, three parts full, of a specially selected sand with a suitable underdrawing for carrying the filtered water to the reservoir. The sand becomes dirty in a short time, depending on the turbidity of the water, and must be washed by a reversed current at least once every day.

Water Purification.

DR. HENRY D. HOLTON, Burlington, Vt., secretary of the state board of health, in his paper on "Water Supplies" declared that the custom of discharging sewage into rivers and other bodies of water can not be too strongly condemned. This practice is a long-standing menace to all water supplies and will sooner or later be the cause of disaster to the health of the community using the water supply. He advocated the careful analysis of all sources of public water supply, and considered the filtration of water a necessary precaution and the filtration of sewage, by which a comparatively harmful effluent might be discharged, also necessary. He called attention to editorials on sewage disposal which he had seen since his arrival in Toronto, which could have been written only in ignorance of the dangers arising from the contamination of the water supply by sewage. He attributed a great proportion of the intestinal and kidney troubles from which the people suffer to a pollution of the water supply. Many interstate and international bodies of water have become affected by the prevalent custom which tends to pollution. The question of reservoirs itself is one that demands governmental attention. Filtration removes the odor and dangerous bacteria, but the tendency among the municipalities to overlook the importance of this feature of water supply is all too apparent.

Purification of Water Supply.

DR. WILLIAM J. ROBINSON, medical health officer of Guelph, Ontario, considered the artificial purification of water for human consumption. He discussed the effect of the sand filter, the rates of filtration and the questions of chemical and mechanical filtrates, and finally referred to the experience of several American cities in which the lowering of the death rate from typhoid fever had followed the adoption of filtering plants.

PROF. JOHN GLAISTER, Glasgow, said that a water supply, pure and abundant, is the best line of defense against the epidemics which formerly swept communities. As a result of such care, he stated that there is now no such thing in Scotland as an epidemic due to impure water. Large reservoir

accommodations and adequate sedimentation areas are needed for filtration, but the color can not be removed by filtration. In his experience there are three ways of securing a good, pure supply of water: First, the purchase outright of the gathering ground or watershed of the district of supply, or of the lake itself, as in the case of Manchester; second, as in the case of Glasgow, the purchase of the rights of conservation of the watershed with the object of preventing pollution, and, third, an arrangement whereby a municipality secures the right of inspection of its water supply.

Pollution of Canadian Streams.

T. A. STARKEY, professor of hygiene in McGill University, Montreal, discussed the question of pollution of water supplies by sewage and gave a summary of his observations for a series of years of the gradual deterioration of the water in the Ottawa and St. Lawrence rivers. He expressed disbelief in the popular idea that large rivers completely purify themselves of pollution by sewage. From a bacteriologic point of view the so-called purification is merely dilution and the pollution is not disposed of. In the St. Lawrence River there has been a gradual increase from an average of 90 colonies of bacteria in 1903 to 168 in 1906. These figures are striking, showing that, whether from sewage or surface drainage, the waters of the river were becoming more polluted every year. The progress of pollution of the Ottawa River is more rapid, the average of increase in the colonies of bacteria having risen in the same period of time from 110 to 300 colonies, and on some special occasions in that part of the river from which Westmount obtains its water supply he found from 1,000 to 1,500 colonies of bacteria, and the average for the entire year was 600. However, a chemist would have been forced to pass this water as first class. Under modern conditions it is practically impossible to obtain a supply of pure water without filtration. He believes that the condition of Canadian waters is becoming dangerous and that the conditions which prevail in Winnipeg would in a very short time exist in the eastern cities unless radical measures are adopted.

Water Situation in Ontario.

DR. PETER HENDERSON BRYCE, Ottawa, formerly secretary of the board of health and now dominion officer of health, said that the question to be decided in Ontario was whether a fight was to be made against the pollution of streams or whether filtration was to be depended on. He is opposed to the pollution of streams. He described the methods adopted by the provincial boards of health for the disposal of sewage in Muskoka, by reason of which, with an average summer population of 20,000, there had not been as much typhoid fever in the last five years as there would ordinarily be found in a common rural community. He was gratified to be able to announce that in at least 125 towns in Ontario the water supply is now reasonably free from suspicion.

Control of Milk Supply.

PROF. R. HARCOURT, Guelph, Ontario, contended that the milk is very rarely kept and handled under proper conditions and that the methods applied to the handling and bottling of milk are in almost every instance faulty. Milk should be used more extensively as a food and not regarded as a luxury. While a most valuable food, milk is especially susceptible to contamination, which it is almost impossible to prevent. Even the use of the milking machine, an improvement on the old method, has not been entirely successful in the elimination of contamination. If a commission were appointed to investigate the conditions under which the milk supply is handled and delivered to the consumer, the report would, he believed, be worse than that recently made regarding the packing establishments of the United States. The consumer has a right to demand milk which, if kept at a temperature of 60 degrees or less, will remain sweet for twenty-four hours. The advisability of the establishment of such a standard for milk, the price of which should depend on the quality of the article furnished, was considered. The addition of preservatives of any kind was deplored as injurious to the public health, and as, under some circumstances, deleterious to the food quality of the milk.

PROF. JOHN GLAISTER, Glasgow, in his paper on "Administration and Control of Milk Supplies," detailed the methods whereby the purity of milk could be assured to the consumer and gave the result of the efforts to that end in Glasgow.

PROF. R. TANNER HEWLETT, London, stated that one of the greatest difficulties in this matter is that public opinion has not been sufficiently aroused and that it is difficult to have legislation preceding public opinion. He emphasized the necessity of compulsory inspection of cattle, the eradication of bovine tuberculosis by approved scientific methods. He also spoke of the regulation to be applied in connection with the housing of cattle and the advisability of the adoption of more satisfactory mechanism for the enforcement of sanitary laws. The questions of temperature and the care of milk were declared to be very importan , and the speaker believed that many of the containers now used are veritable microbe traps. He favored the use of sealed bottles for the distribution of milk, and further suggested as a preventive measure the immediate chilling of the milk.

A resolution was thereon adopted by the section that the section strongly recommend to the local government boards of Great Britain, Ireland and to the provincial board of health of Canada that the time has come when the existing provision of the law with regard to the housing of dairy cattle, milk storage and milk distribution and the periodic inspection of such cattle and dairies should be more strictly enforced.

(To be continued.)

AMERICAN ACADEMY OF OPHTHALMOLOGY AND OTO-LARYNGOLOGY.

Eleventh Annual Meeting, held at St. Clair, Mich., Aug. 30-Sept. 1, 1906.

The President, DR. CASEY A. WOOD, Chicago, in the Chair.

The academy was called to order by the president, and an address of welcome on behalf of the state of Michigan was made by Congressman Edwin Denby, to which a suitable response was made by Dr. Charles B. Stockwell, Port Huron, Mich, president of the Michigan State Medical Society.

Addresses.

DR. CASEY A. WOOD, Chicago, president, and DR. JOSEPH A. STUCKY, Lexington, Ky., vice-president, delivered a joint address on the "Relationship of the Eye to the Orbit and the Neighboring Cavities."

The oration on oto-laryngology was delivered by Dr. Dundas Grant, London, Eng., on "Some Practical Problems in Otology and Rhinology."

The oration on ophthalmology was delivered by Mr. R. Marcus Gunn, F.R.C.S., London, Eng., on "Optic Nerve Ailments."

Both these orations were illustrated by the stereopticon.

Election of Officers.

The following officers were elected: President, Dr. Joseph A. Stucky, Lexington, Ky.; vice-presidents, Drs. Richard A. Reeves, Toronto, and Eugene Smith, Detroit; secretary, Dr. George F. Suker, Chicago (re-elected); treasurer, Dr. Otto J. Stein, Chicago (re-elected), and members of the council, Drs. Joseph A. Stucky, Lexington, Ky., Hanau W. Loeb and Adolph Alt, St. Louis; Alvin A. Hubbell, Buffalo, N. Y., and William L. Ballenger, Chicago.

The academy will probably hold its 1907 session in Louisville, Ky., but the exact time and place will be fixed by the council about six months before the time for the meeting.

(To be continued.)

AMERICAN ORTHOPEDIC ASSOCIATION.

Twentieth Annual Meeting, held in Toronto, Canada, Aug. 20-22, 1906.

(Concluded from page 801.)

Congenital Dislocation of the Hip.

DR. GEORGE B. PACKARD, Denver, reported cases and made remarks on the treatment by manipulative reduction. The most favorable time for reduction is shortly after the patient

begins to walk. The hamstrings should be left unstretched, so that if redislocation occurs after application of the plaster this may be indicated by sudden relaxation of the hamstrings. In unstable cases especially the plaster should be applied very snugly.

Coxa Valga.

DR. JAMES K. YOUNG, Philadelphia, reported several cases in which, as shown by skiagraphs, the angle between neck and shaft of femur seems to be wider than normal, i. e., more than 135°. Adduction of the thigh is limited.

DISCUSSION.

DR. JOHN RIDLON, Chicago, in discussion of the two foregoing papers, said that in congenital anterior dislocation of the hip reduction should be effected by inward rotation after flexion, Anterior dislocation is shown by feeling the head in the groin on extreme outward rotation. The angle between the neck and the shaft of the femur in a skiagraph can be increased by rotating the leg, and this probably accounts for the apparent cases of coxa valga reported.

DR. ALBERT H. FREIBERG, Cincinnati, said that great caution was necessary in estimating the angle of the neck from a skiagraph.

DR. YOUNG said that he believed that at least three of the cases presented by him were coxa valga.

Plaster-of-Paris.

DR. WALTER G. STERN, Cleveland, said that the greatest strength is obtained from slow-setting dental plaster that requires from 6 to 7 minutes to set. All agents that hasten the time of setting weaken the result. From 10 to 20 per cent. Portland cement in the plaster strengthens the result without lengthening the time of setting. The mixed plaster and cement can be softened by immersion in water for half an hour so that it can be cut by a sharp knife.

Intermittent Limping.

DR. ROBERT W. LOVETT, Boston, said that early symptoms simulate those of simple static foot trouble. The trouble is primarily circulatory and the only effective treatment of it is rest. He recorded three cases, one of which came to amputation.

DISCUSSION.

DR. ALBERT H. FREIBERG, Cincinnati, said that cases of foot trouble which are not relieved by rest are probably only secondarily static and should suggest arteriosclerosis.

DR. JOEL E. GOLDTHWAIT said that the regularity of onset of symptoms, as always after walking two blocks, suggested arterial trouble. Great and sudden pain is also suggestive.

DR. LOVETT said that in every case of foot trouble that he saw he palpated the dorsalis pedis and the posterior tibial arteries in order to rule out circulatory trouble.

DR. COMPTON RIELY, Baltimore, read a paper entitled "Report of a Case of Chronic Dislocation of the Lower Jaw, Presenting a Simple Device for Maintaining Reduction."

Old Fractures of the Tarsus.

DR. LEONARD W. ELY, New York, reported seventeen cases. He said that in cases of chronic foot trouble an old fracture is often unrecognized. Treatment of old cases should be symptomatic, as by supportive adhesive strapping; but treatment is unsatisfactory. Recent cases of foot trauma should be skiagraphed to discover fracture if present. Recent fractures of the tarsus should be immobilized; displaced fragments should be dealt with surgically.

DISCUSSION.

DR. CHARLES F. PAINTER, Boston, said that prolonged immobilization of old cases in plaster-of-Paris is the only effective treatment. Operative treatment in old cases is usually to be avoided.

DR. FRANK E. PECKHAM, Providence, R. I., reported an old case in which removal of a fracture spicule entirely relieved the symptoms.

Supports for the Arch.

DR. PHIL. HOFFMAN, St. Louis, read a paper entitled "A Method for Measuring for Shaping and Placing Cork, Felt, Leather or Similar Arch Supports." A paper model is cut out to cover area of sole enclosed between marks at posterior margin of ball of great toe, anterior margin of weight-bearing surface of heel and ¾ inches from outer margin of sole. The astragaloscaphoid juncture is marked on the paper as the highest point of the support, and the support made from this model is set in the shoe so that the highest point is as far from the back of the shoe as the astragaloscaphoid juncture is from the back of the heel.

DR. ANSEL G. COOK, Hartford, Conn., read a paper entitled "A New Form of Shoemaker's Last." The foot is placed on a steel plate shaped like the sole of a shoe, and foot and plate swathed in plaster-of-Paris. This is cut off and filled with plaster. The shoe is made directly on the resultant cast, without hammering. The cast can be changed by the surgeon to any shape desired.

Suture Necrosis in Tendon Suture and Tendon Transplantation.

DR. DAVID SILON, Pittsburg, reported having made an experimental study of the influence of such necroses. The research leads to the conclusions that the strength in the union of grafted tendons depends on the callus; that failure to hold from necrosis must be very rare; that failure to hold on account of insufficient suturing is probably common. Tendons should be raised from their sheaths as little as possible, and sheaths should be restored by suturing the divided edges.

Torticollis.

DR. REGINALD SAYRE, New York, said that many cases of torticollis, formerly supposed to be due to "cold" or "rheumatism" in the soft parts, are probably dependent on arthritis of the cervical spine, or to slight fracture. He reported cases.

DRS ROBERT W. LOVETT, Boston, and S. C. BALDWIN, Salt Lake City reported cases.

Hemophilic Joints.

DR. ARTHUR J. GILLETTE, St. Paul, reported that subcutaneous injection of 5 per cent. gelatin solution in one case several times stopped dangerous hemorrhage into joints. Great destruction of joint may be caused, thus simulating joint tuberculosis. Rise in temperature precedes hemorrhage into joints. Immobilization and ice application relieves the severe joint pain. Gelatin by mouth is sometimes prophylactic.

DISCUSSION.

DR. EDWIN W. RYERSON, Chicago, reported a hemophilic joint that had been mistaken for a gonorrheal joint.

DR. JOEL E. GOLDTHWAIT, Boston, said that in one case 5 grains salicylate of sodium, twice in day, always greatly relieved the pain of an attack.

DR. GILLETTE said that he believed that so-called purpuric rheumatism was really hemophilic joint.

Wednesday morning, August 22, the Association visited the Toronto Orthopedic Hospital, where a clinic was conducted by Dr. MacKenzie, and a luncheon given by the ladies' board of the hospital. Apparatus was exhibited and cases reported by Drs. David Silon, Pittsburg; Herbert P. H. Galloway, Winnipeg, Canada; Ansel G. Cook, Hartford, Conn.; Compton Riely, Baltimore; Wm. E. Blodgett, Detroit; Bart E. MacKenzie, Toronto; Walter G. Stern, Cleveland; Edwin W. Ryerson, Chicago, and J. T. Watkins, San Francisco.

AMERICAN ROENTGEN RAY SOCIETY.

Seventh Annual Meeting, held at Niagara Falls, N. Y., Aug. 29-31, 1906.

(*Concluded from page 798.*)

Teaching Roentgenology in Medical Colleges.

DR. VERNON J. WILLEY, Ann Arbor, Mich., urged that medical colleges should give some attention to the teaching of Roentgenology, because of its value in diagnosis and therapeutics. Instruction should be given in the principles rather than in the technic, which must be acquired by actual experience. An intelligent grasp of the principles of Roentgenology involves a knowledge of radiophysics, a general knowledge of the apparatus employed, of radiography and fluoroscopy, with especial reference to the interpretation of screen and negative;

of radiotherapy, with especial reference to pathologic conditions which yield to irradiation. Students should be taught the effects of the rays on various tissues, and the limitation of the ray in therapeutics. A course of twelve or twenty hours is sufficient.

Method of Estimating X-Ray Dosage.

DR. HENRY G. PIFFARD, New York City, takes a brass ball about one and one-quarter inches in diameter and supports it about four inches from the wall of the tube just within the circle of rays issuing from the anterior hemisphere. The ball is then connected by a cord about eight feet long to the charging device of the electroscope. As soon as the current passes through the tube the aluminum needle or foil indicates the charge and the angle is easily read off on the scale. For this purpose he found Braun's electroscope, which is graduated in volts, or his own, which is graduated in degrees of an arc, very convenient. The angle varies directly with the current passing through the tube, and also shows whether the tube is running steadily or not, and indicates any notable change in the vacuum.

Roentgen Ray Filter.

DRS. G. E. PFAHLER and J. F. SCHAMBERG, Philadelphia, conducted a series of experiments on rabbits in which use was made of silver, leather and aluminum, for the purpose of establishing their value as filters. They found the leather of decided value for filtering out the soft, medium and hard rays. They also found that the susceptibility to the rays varied in animals, which doubtless is also true of man.

New Direct Reading of X-Ray Meter.

DR. GEORGE C. JOHNSTON, Pittsburg, takes advantage of the fluorescence produced on a tungstate of calcium or other screen as indicating the quantity of the *x*-rays emitted. The fluorescing screen is placed in a light, tight box, and facing it is a selenium cell, which has the property of changing its ohmic resistance to the passage of the electric currents with relation to the presence or absence of light waves. Such a cell, when kept in total darkness, may have the resistance of several hundred ohms, yet on permitting light, natural or artificial, to strike on the cell, its ohmic resistance falls almost instantly to a great degree, and this alteration bears a direct relation to the intensity of the light. If there is placed in series with such a cell a galvanometer or ammeter of sufficient delicacy, a series of current such as an ordinary dry battery and a variable rheostat providing a means of introducing more or less ohmic resistance into the circuit, and the rheostat, the measuring instrument, and the selenium cell be balanced, the point will be found at which the ohmic resistance of the rheostat, the communicating wires, the selenium cell, and the measuring instrument will exactly balance the electromotive force of the battery.

If, however, the container having within it the screen and cell be placed in the path of the *x*-rays, the screen will become luminous in proportion to the distance from the source of the rays and the quality of rays striking it. The container will be illuminated, the selenium cell under the influence of this light will change its ohmic resistance in proportion to the light, and the current flow will be measured and indicated on the dial of the galvanometer or other instrument employed for the purpose of making these electric measurements.

President's Address.

DR. HENRY HULST, Grand Rapids, Mich., presented further observations on the "Roentgenology of the Stomach and Intestines," and illustrated his paper with a large number of instructive radiographs.

Treatment of Lupus Vulgaris.

DR. H. W. VAN ALLEN, Springfield, Mass., reported 15 cases, with 80 per cent. cures. The average time since treatment was discontinued is from one year to eight months. The average time of treatment is six months, the shortest period being three months and the longest nine months. The most recent case was treated three months ago. The longest time that has elapsed since treatment is three years. Eleven cases were cured; in one there was an apparent cure; one is returning, and two cases were not benefited.

Tubercular Adenitis.

DR. RUSSELL H. BOGGS, Pittsburg, said that the results obtained by the Roentgen ray in the treatment of tubercular adenitis compare favorably with those obtained by any other method. A large proportion of the cases can be apparently if not permanently cured. Several cases have remained cured for over four years. Improvement is not obtained, as a rule, until at least twelve treatments have been given. There are exceptions, however, one patient being improved after four treatments, and others not improving until after twenty-five or more treatments. A permanent cure should not be expected until after at least three months' treatment. He advised that in treating these cases the apices of the lungs should also be rayed. To be beneficial treatment must be energetic.

Ultimate Results in Carcinoma of Breast.

DR. GEORGE C. JOHNSTON, Pittsburg, advised treatment of all cases of carcinoma of the breast, both before and after operation. The application of the *x*-ray combined with skillful surgery offers the only hope of cure. Postoperative treatment should be begun not later than the tenth day. The mediastinum and axilla should also be rayed. Primary carcinoma should be treated by the ray alone only when the age and condition of the patient argue against operation. Mediastinal involvement is not a sign of fatality. No case should be treated with the *x*-ray that can not be treated surgically. Filters should always be used.

Measurement of Diameter of Pelvis.

DR. GEORGE E. PFAHLER, Philadelphia, described his method of measuring the diameter of the pelvis by means of the Roentgen ray. The technic is based on four principles: 1. The plate must be brought parallel to the brim of the true pelvis. 2. Measure the distance of the brim of the pelvis from the anode of the tube. 3. Distance of anode of tube from plate. 4. To place the anode in the axis of the brim of the true pelvis. To assist in attaining successful results he makes use of a very simple apparatus, which was exhibited.

Roentgen Ray in Dermatology.

DR. ANDREW P. BIDDLE, Detroit, said that experience has shown the value of the Roentgen ray in the treatment of skin affections when it is used conservatively and with due regard to recognized dangers. The ray is useful in selected cases, but not as a routine treatment. It should be used in addition to other remedies, especially in those cases which have resisted ordinary treatment and where there is a marked infiltration of tissue. Stubborn cases of acne, otherwise incurable, yield readily to the ray and relapses are less frequent. The *x*-ray is contraindicated in all acute cases and in the acute exacerbations of all chronic cases.

Treatment of Epithelioma.

DR. KENNON DUNHAM, Cincinnati, said that in epithelioma of the face, except when the tumor is situated on the lip, the *x*-ray gives the best results in every way. That the *x*-rays have scattered the growth throughout the body, doing more harm than good, is true, but that is due to the fact that physicians generally use any tube in place of securing the most suitable tube. In cases of tumor of the lip a radical operation should be done, with careful dissection of all lymphatics draining the part. Radiation before and after operation (for at least two months) is essential. After operation exposures can be made every second or third day, using a leather filter. In cases of recurrent rodent ulcer and large epitheliomata of the body or extremities which have penetrated deeply he uses the galvanic current, with local or general anesthesia, completely surrounding the tumor with galvanized needles, connecting these with the positive pole of the battery, using 30 to 110 volts. This closes the lymphatics and blood vessels surrounding the tumor, lessening the danger of metastasis and a large part of the tumor sloughs out. His results have been excellent.

Diagnosis of Renal Calculi.

DR. F. H. BAETJER, Baltimore, said that with a good apparatus and technic calculi, when present, can practically always be found. The position of the calculus should be determined

positively, so that the surgeon, when operating, can not overlook the stone. The use of the *x*-ray for this purpose is free from danger and of great benefit to the patient. Negative findings should not be relied on.

Diaphragm in Roentgenography of Chest.

DR. P. M. HICKEY, Detroit, said that a small negative made with the diaphragm shows more detail of structure than a large general plate. Early changes in the lung are easily shown with a diaphragm plate, and it is more accurate in detecting small areas of involvement than is the stethoscope. Diagnoses can also be made earlier.

Roentgen Ray in Blood Diseases.

DR. HENRY K. PANCOAST, Philadelphia, reported the final results in cases referred to in previous papers, and added three new cases. He said that in leukemia the *x*-ray is not a curative agent, but by secondarily destroying excessive and abnormal kinds of lymph tissue, and by greatly increasing the numbers of leucocytes in the blood, the individual organism is given a chance to remove the cause of the disease. In certain constitutional disorders the *x*-ray is not only dangerous, but may contribute to a fatal issue. One of the cases which last year he reported symptomatically cured had two relapses since, and the patient died. Another case reported as symptomatically cured has relapsed.

Changes in Kidneys Produced by Roentgen Ray.

DR. A. S. WARTHIN, Ann Arbor, Mich., examined the kidneys of three cases in leukemia treated by the Roentgen ray. He found extensive necrosis and calcification, the changes in general resembling those produced by certain poisons. He believes that long exposures damage the renal cells primarily to but a slight degree, but that after long irradiation there is a second injury to the kidney epithelium, due most probably to an intoxication. The destruction of the lymphoid tissue is the most probable source of the poison, the symptoms of the intoxication in general resembling those due to products of proteid distintegration.

Localization of Foreign Bodies in Eye.

DR. CHARLES F. BOWEN, Columbus, Ohio, has devised an apparatus for locating accurately foreign bodies in the eye. It is a modification of Sweet's apparatus, and can be used in conjunction with the compression cylinder diaphragm. It is so arranged that the patient's head is held absolutely quiet during the exposure. The plates are changed by means of a plate-holder without disturbing the head.

Carcinoma of Bladder.

DR. ALFRED L. GRAY, Richmond, Va., reported a case of squamous cell carcinoma of the bladder in which the tumor was removed surgically, the pedicle being treated with the *x*-ray. Treatment was administered every other day, and after twenty-one treatments the stump of the tumor had disappeared entirely, leaving a soft linear scar.

Fee Table.

The committee appointed to prepare a fee table reported as follows: For work done in the laboratory: Sinus examinations, $25 to $50; location of foreign bodies in the eye, $25 to $50; examination of teeth, $10 to $75; diagnosis of renal and vesical calculi and gallstones, $50 to $200; examination of stomach and bowel, $75 to $200; examination of chest, $25 to $100; examinations of shoulder, $25 to $50; examination of elbow, $15 to $50; knee and wrist, $15 to $50; hip and pelvis, $50 to $150; foot and ankle, $15 to $50; leg and knee, $25 to $75; for work done outside of the laboratory, from 50 to 500 per cent. additional, according to mileage. The report was adopted.

The following papers were also read: "Further Experimental Research Concerning Direct, Indirect and Secondary Skiagraphic Rays," by Dr. L. G. Cole, New York City; "The Induction Coil," by Mr. H. C. Snoop, Philadelphia; "Résumé of the Radiometric Dosage of Roentgen Ray Therapy," by Dr. M. A. Kassabian, Philadelphia; "Use of *X*-Ray Filters in Radiotherapeutics," by Dr. Reginald Morton, London, Eng.; "The Tube in Roentgen Therapeutics," by Dr. E. G. Williams, Richmond, Va.; "Possibilities of Formulating a Standard of Radioactivity," by Dr. C. D. S. Phillips, London, Eng.; "Roentgenologic Study of Certain Manifestations of Syphilis," by Dr. Percy Brown, Boston; "Action of the Roentgen Rays on the Central Nervous System," by Dr. Carlo Colombo, Rome, Italy; "Differential Diagnosis of the Chronic Non-tubercular Joint Diseases by Means of the Roentgen Ray," by Dr. Robert B. Osgood, Boston; "Skiagraphy of the Accessory Sinuses of the Nose," by Dr. E. W. Caldwell, New York City; "General Observations as to the Effects of the *X*-Rays on Hair and Other Tissue Elements," by Dr. W. S. Newcomet, Philadelphia.

State Boards of Registration

COMING EXAMINATIONS.

OKLAHOMA Board of Medical Examiners, Guthrie, September 25. Secretary, J. W. Baker, Enid.

NEW YORK Boards of Medical Examiners, Albany, September 25-28. Chief of Examining Division, Charles F. Wheelock, Albany.

UTAH State Board of Medical Examiners, Salt Lake City, October 1. Secretary, R. W. Fisher, Salt Lake City.

ARIZONA Board of Medical Examiners, Phoenix, October 1-2. Secretary, Ancil Martin, Phoenix.

COLORADO State Board of Medical Examiners, Denver, October 2. Secretary, S. D. Van Meter, Denver.

IDAHO State Board of Medical Examiners, Lewiston, October 2. Secretary, J. L. Conant, Jr., Genesee.

MONTANA Board of Medical Examiners, Senate Chamber, The Capitol, Helena, October 2. Secretary, Wm. C. Riddell, Helena.

MINNESOTA State Board of Medical Examiners, Old Capitol Building, St. Paul, October 2-4. Secretary, W. S. Fullerton, St. Paul.

NORTH DAKOTA State Board of Medical Examiners, Grand Forks, October 2-4. Secretary, H. M. Wheeler, Grand Forks.

RHODE ISLAND State Board of Health, Room 313, State House, Providence, October 4-5. Secretary, Gardner T. Swarts, Providence.

GEORGIA Board of Medical Examiners (Regular), Capitol, Atlanta, October 9. Secretary, E. R. Anthony, Griffin.

ARKANSAS State Medical Examining Board, Little Rock, October 9. Secretary, J. P. Runyan, Little Rock.

KANSAS State Board of Medical Registration and Examination, State House, Topeka, October 9. Secretary, F. P. Hatfield, Grenola.

MICHIGAN State Board of Registration in Medicine, Lansing, October 9. Secretary, R. D. Harison, Detroit.

MISSISSIPPI State Board of Health, The Capitol, October 9. Secretary, J. F. Hunter, Jackson.

DISTRICT OF COLUMBIA Board of Medical Supervisors, Washington, October 11. Secretary, Geo. C. Ober, Washington.

NEW JERSEY State Board of Medical Examiners, Trenton, October 16-17. Secretary, J. W. Bennett, Long Branch.

TEXAS State Board of Medical Examiners, Houston, October 16-18. Secretary, T. T. Jackson, San Antonio.

FLORIDA Board of Medical Examiners (Regular), Jacksonville, October 17-18. Secretary, J. D. Ferrandez, Jacksonville.

ILLINOIS State Board of Health, Great Northern Hotel, Chicago, October 17-19. Secretary, J. A. Egan, Springfield.

LOUISIANA State Board of Medical Examiners, New Orleans, October 19-20. Secretary, F. A. Larue, New Orleans.

INDIANA Board of Medical Registration and Examination, Indianapolis, October 23-25. Secretary, W. T. Gott, Indianapolis.

Kansas June Report.—Dr. F. P. Hatfield, Secretary of the Kansas State Board of Medical Registration and Examination, reports the written examination held at Kansas City, June 12-13, 1906. The number of subjects examined in was 10; total number of questions asked, 100; percentage required to pass, 75. The total number of candidates examined was 82, all of whom passed. The following colleges were represented:

PASSED. College.	Year. Grad.	Per Cent.
Hahnemann Med. Coll., Chicago	(1905)	84
University of Kansas (1906) the grade of 75 was reached by one, 76 and 77 by two each, 78 by one, 79 by three, 80 by two, 81 by five, 82 by four, 83 by seven, 84 by six, 85 by five, 86 by four, 87 by three, 88 by one, 89 by two, and 90 by one; total, 47.		
Kentucky School of Med	(1895)	78
St. Louis Univ. (Marion-Sims-Beaumont Med. Coll.)	(1906)	83, 84
Washington University	(1906)	83
Barnes Med. Coll	(1904) 80; (1906)	75, 79, 82
Homeopathic Med. Coll. of Missouri	(1895)	85
Kansas City Hahnemann Med. Coll	(1905)	86
Eclectic Med. University	(1906)	79, 80, 80
University Med. Coll. of Kansas City (1906) 78, 78, 80, 80, 84, 84		
Epworth Central Med. Coll. (1905) 77; (1906) 75, 75, 75, 76, 76, 79, 80, 80, 82.		
Eclectic Med. Institute, Cincinnati	(1906)	83
University of Nashville	(1906)	78
Meharry Med. Coll	(1906)	84

The following questions were asked:

EYE, EAR, NOSE, THROAT AND MEDICAL JURISPRUDENCE.

1. (a) How would you detect a foreign body in front of the lens? (b) behind the lens? 2. Give differential diagnosis of acute iritis and keratitis and give treatment of each. 3. Give etiology, pathology and treatment of acute otitis media purulenta. 4. Give symptoms, pathology and treatment of chronic otitis media. 5. Give diagnosis, symptoms and treatment of pharyngeal abscess. 6. Give treatment for the removal of foreign bodies lodged in the trachea or bronchus. 7. Give the positive signs of death previous to onset of rigor mortis. 8. Describe the pathology of a burn before and after death.

ECLECTIC MATERIA MEDICA.

1. (a) What are antiseptics? (b) Name five and give indications for their use. 2. Give botanical name and description of phytolacca, dose and indication for its use. 3. Give specific indications for the use of bryonia. 4. Name three drugs that have an action on the heart and give the indication for each one's use. 5. In what condition would you use apocynum? 6. Give the specific indications for the use of baptisia, sulphite of soda and colocynth. 7. In what conditions of skin and tongue would you give nux vomica? 8. In what pathologic conditions of the body would you give cathartics? 9. (a) What are emetics? (b) Name and classify three remedies used as emetics. 10. Give specific indications for the use of rhus tox., pulsatilla, lycopus and quinin.

ECLECTIC THEORY AND PRACTICE.

1. Describe and treat a case of cholera infantum. 2. What is specific medication? 3. What is meant by (a) excess, (b) defect and (c) perversion? (d) What are their effects on health? 4. Name four remedies that act specifically on the (a) respiratory organs, (b) digestive organs, (c) urinary organs and (d) the reproductive organs. 5. Give the special indications for (a) phytolacca, (b) apocynum, (c) eryngium, (d) nux vomica, (e) viburnum, (f) ergot. 6. Name five remedies used in sepsis. 7. Do you recommend the use of poultices? If so, why? 8. (a) Name the remedies usually indicated in typhoid fever; (b) scarlet fever. 9. How are remedies best prescribed? Why? 10. Treat a case of constitutional syphilis.

HOMEOPATHIC MATERIA MEDICA.

1. Give five prominent indications for sulphur. 2. Give five characteristics common to both bryonia and sanguinaria. 3. Name five leading remedies for typhoid fever and give three characteristic symptoms of each. 4. In beginning treatment of a chronic disease in which the patient has been previously overdrugged, what two remedies are usually recommended? 5. Give five characteristic indications for echinacea. 6. Write what you know of crataegus oxycanthe. 7. Differentiate between camphor and veratrum alb. in cholera. 8. Is the law of similars the only true law of curing disease? 9. Differentiate between mercury and kalliod. in the treatment of syphilis. 10. Differentiate bladder symptoms of cantharides, terebintha and cannabis sativa.

HOMEOPATHIC THEORY AND PRACTICE.

1. Make a diagram of the chest and locate the valves of the heart thereon, on the surface. 2. Give differential diagnosis between gastralgia, gastric ulcer and duodenal ulcer. 3. Give symptoms and diagnosis of cirrhosis of the liver. 4. Give methods of diagnosis and symptoms in epidemic cerebrospinal meningitis. 5. Give diagnosis and treatment of herpes zoster. 6. Give differential diagnosis of renal and hepatic calculi and acute peritonitis. 7. Describe minutely typhoid fever in its different stages. 8. Name the abnormal heart sounds and points of intensity. 9. Give diagnosis and treatment of acute and chronic hepatitis. 10. Give differential diagnosis between acute yellow atrophy and sclerosis and hepatic cancer.

OBSTETRICS AND GYNECOLOGY.

1. Write two pages on diseases of pregnancy. 2. Face presentation—diagnosis and classification. 3. Cause of prolonged labor, and when is instrumental interference imperative? 4. Cause of pelvic deformity. 5. Placenta prævia—diagnosis and treatment. 6. Puerperal septicemia—history of the disease. 7. Puerperal insanity—classify and give prognosis. 8. Give indications for use of forceps. 9. Give four deformities of the pelvis. How would you detect them? 10. How would you treat fibroid tumor of the uterus?

PATHOLOGY.

1. Give the pathologic conditions of acute and chronic systitis. 2. Give the pathology of mitral stenosis. 3. Give the pathologic differences between chancre and chancroid. 4. Give the pathology of chronic parenchematous nephritis. 5. Give the pathology of amyloid liver and hepatic cancer. 6. Give the etiology and pathology of arterial sclerosis. 7. Give the etiology and pathology of multiple neuritis. 8. Give the etiology and pathology of pulmonary tuberculosis. 9. Give the etiology and pathologic condition in pachymeningitis spinalis. 10. Write two pages on the pathologic condition found in the different stages of acute croupous pneumonia.

CHEMISTRY AND TOXICOLOGY.

1. How is the specific gravity of a body heavier than water determined? 2. How are the decimal multiples of a gram designated? 3. What is electromotive force? 4. If a glowing charcoal ember is immersed in a jar containing oxygen, what takes place and what the result? 5. What is the treatment of acute poisoning by free iodin? 6. What are the chemical properties of HNO_3? 7. What is the treatment of poisoning by HCY? 8. In what quantities is NaCl, or chlorids represented by it, eliminated from a healthy person in twenty-four hours? 9. What is the treatment of chronic plumbism? 10. Give the principal tests for sugar in urine.

ANATOMY.

1. Describe the sphenomaxillary fossa, giving its boundaries. 2. Trace a blood corpuscle from the heart to end of great toe and return. 3. Which are the peculiar vertebræ (dorsal), and give peculiarities of each. 4. Bound Scarpa's triangle and name the various recognized triangles of the body 5. Describe the changes in the vascular system at birth. 6. Describe the lungs and give their histology. 7. Name structures divided in amputation of the thigh at the middle third. 8. Give the histology of the skin and name its appendages. 9. Describe the thymus gland, giving its minute anatomy and peculiarities. 10. Give the histology of the mammary glands.

SURGERY.

1. (a) Describe the operation for strangulated femoral hernia. (b) Including preparation of the patient. (c) Technic of the operation and the after treatment of the patient. 2. Give the differential diagnosis between malignant and non-malignant tumors. 3. Give treatment for a sprained ankle and name the tissues involved. 4. (a) Give the differential diagnosis between three varieties of hip-joint dislocations. (b) Give method of reducing each. 5. Give minute description of Chopart's operation. 6. Name the different varieties of talipes and give treatment of the last you name. 7. Describe minutely the ligation of the subclavian artery in its most accessible portion. 8. In gunshot wounds, what are the chief indications for operative treatment? 9. Name the different varieties of dislocation of shoulder joint and minutely describe reduction and treatment of any one of them. 10. (a) Give cause, diagnosis and treatment of tetanus. (b) How would you prevent it?

BACTERIOLOGY.

1. (a) Describe minutely and name the micro-organisms that produce cerebrospinal meningitis. (b) What bacterium does it closely resemble? (c) What three micro-organisms are usually associated in cerebrospinal meningitis? 2. (a) Differentiate parasites from saprophytes. (b) What are their functions? (c) What do they depend on for existence? 3. (a) Give general characteristics of *Bacillus tuberculosis*. (b) How would you stain the bacillus in sputum? (c) Name the most frequent channels of infection. (d) Name three bacilli that closely resemble the tubercle bacillus. 4. (a) Describe and name the micro-organism found in relapsing fever. (b) Are they ever found in any other disease? 5. (a) What are aërobia, anaërobics and faculative anaerobics? (b) Give examples of each bacteria. 6. (a) Give simple method of staining bacteria; (b) of staining bacteria in tissues. (c) Give Gram's method of staining. 7. (a) Give general characteristics of *Bacillus diphtheriæ*. (b) What bacteria are usually associated with diphtheria bacillus? (c) Give the difference between pseudodiphtheria bacillus and diphtheria bacillus. 8. (a) Describe the *Bacillus typhosus*.. (b) Give some of the common methods of infection from the bacilius of typhoid. (c) Give the best methods of prophylaxis against typhoid fever. 9. What pyogenic organism produces pyemia? 10. (a) What is phagocytosis? (b) What is the difference between contagion and infection?

PHYSIOLOGY.

1. How is physiology studied? 2. Describe the main features of the circulation. 3. (a) Name the divisions of the vasomotor system. (b) From what part are the fibers of each known to arise? 4. (a) Name the fluids of the alimentary canal. (b) Where is the succus entericus found? 5. What conditions produce variations in the normal temperature? 6. Name the structures necessary for the formation of a reflex arc. 7. What three forces are in action in the absorption of digested food? 8. In what organs is the blood changed? 9. Give the symptoms of insufficient oxygen in the blood. 10. Mention three inorganic substances found in the body and state in what part each is found.

HYGIENE.

1. What are the most common sources of infection in diphtheria? 2. What means should be employed by persons prone to "catch cold"? 3. Does change in climate require any change in food? If so, what? 4. State the physical condition that makes the practice of taking hot baths inadvisable. 5. What constitutes hard and soft water? 6. What instructions as to hygiene should be given in a case of diphtheria? 7. Does alcohol possess a food action? 8. State the best means of disinfecting sputum. 9. What is meant by natural and acquired immunity from disease? Give an example of each. 10. What are the general effects of breathing impure air?

New Jersey June Report.—Dr. J. W. Bennett, Secretary of the New Jersey State Board of Medical Examiners, reports the written examination held at Trenton, June 19-20, 1906. The number of subjects examined in was 14; total number of questions asked, 135, from which candidate was required to answer 90; percentage required to pass, 75. The total number of candidates examined was 56, of whom 53 passed and 3 failed. The following colleges were represented:

PASSED.

College.	Year. Grad.	Per Cent.
George Washington University	(1900)	75.1, 83.9
Georgetown University	(1904)	80.5, 82.1
Howard University	(1905)	79.4
Yale University	(1890)	81.
Hahnemann Med. Coll., Chicago	(1891)	81.5
College of P. & S., Baltimore (1904) 76.3; (1905) 83.1; (1906) 85.2, 88.		
Baltimore Med. Coll. (1897) 85.9; (1905) 77.8, 78; (1906)		88.9
New York University Med. Coll	(1885)	80.
Long Island Coll. Hosp	(1904) 75; (1906)	83.5, 85.3
Cornell University	(1905)	81.1
Woman's Med. Coll., Philadelphia	(1903) 82.6; (1906)	88.5, 78.7
Medico-Chirurgical Coll., Philadelphia (1905) 77.9, 81; (1906) 76.7, 77.1, 79, 82.3, 83.3, 85, 85.4, 85.8, 86.4.		
Jefferson Med. Coll. (1905) 81.6; (1906) 77.8, 79.1, 80.3, 82.3, 82.5, 83.5, 84.9, 85.5.		
University of Pennsylvania	(1804) 78.6; (1906)	84.2
Hahnemann Med. Coll., Philadelphia	(1906)	78.6, 81.5
Medical Coll. of South Carolina	(1901)	81.
University of Vermont	(1889)	81.2
Medical College of Ohio	(1903)	77.
Queen's University, Ontario	(1903)	84.7
Woman's Med. Coll., Ontario	(1906)	89.8
Western University	(1905)	84.5

FAILED.

Baltimore Med. Coll	(1905)*
Baltimore University	(1904)*
Boston University	(1904)*

* Percentage not given.

Therapeutics

[It is the aim of this department to aid the general practitioner by giving practical prescriptions and, in brief, methods of treatment for the diseases seen especially in every-day practice. Proper inquiries concerning general formulæ and outlines of treatment are answered in these columns.]

Treatment of Chlorosis.

For the successful treatment of this condition five methods should be adopted: 1, Dietetic; 2, hygienic; 3, medicinal; 4, non-medicinal; 5, mental.

DIETETIC.

The food should be light and nutritious and capable of easy digestion and ready absorption. At first a small or moderate quantity should be given. Milk is one of the most useful foods when it is easily digested, but it fails in two ways of being a perfect food; it contains too little iron and large quantities must be taken to satisfy the patient.

A cupful of peptonized milk 3 or 4 times a day will be useful when unprepared milk disagrees. A good substitute for milk is a mixture of equal parts of cream and hot water (2 oz. of each), to which a little sodium bicarbonate and a teaspoonful of brandy may be added. All forms of animal food, prepared in a manner easy of digestion, are beneficial. G. Sée recommends scraped raw beef, as much even as 14 oz. a day. Raw, scraped, or powdered meat may be given in consommé, in the form of sandwiches, or mixed with chocolate or Burgundy and water. The digestive power for this kind of food must be carefully watched, and if necessary, aided by the addition of some appropriate digestive ferment. Eggs in any form are valuable, as they are generally rich in iron and easily digested.

Animal albuminates should predominate in the diet at first. Easily digested fat, such as butter, cream, broiled fat bacon, cod-liver oil, should not be added. Green, fresh vegetables, especially in the form of purées are useful, not only as food, but to obviate the tendency to constipation.

HYGIENIC.

At the outset rest in bed in a well ventilated room or on a couch in fresh air should be particularly enforced. In chlorosis the cardiac muscle undergoes fatty changes, and if the heart wall is to recover itself and perform its function normally afterwards, it must have as much rest as possible during the treatment. For some time the patient should not be allowed to rise before midday. As soon as some improvement in the blood condition is observable, and some return of healthy functional activity is apparent, a moderate amount of gentle out-of-door exercise may be permitted, and this should be gradually increased with each increasing gain in health and strength.

Rectify such disadvantages of the life of the patient as can be ascertained. Over-pressure at school, unwholesome conditions of work or amusement, late hours, worry, any emotional strain or excitement, sexual aberrations, tight lacing, etc., are points to which the physician's attention will be directed.

MEDICINAL.

Free elimination by the bowels, kidneys and skin must be maintained. Autotoxemia is a very frequent cause of chlorosis. A saline laxative given every morning is usually of great value.

In many cases the laxative iron mixtures are to be preferred. The following are excellent prescriptions:

℞.	Tinct. ferri chloridi	m. x	60
	Magnesii sulphatis	gr. xx	1 20
	Sodii sulphatis	gr. xx	1 20
	Glycerini	℥ss	2
	Infusi quassiæ, ad	℥i	30

M. Ft. mist. Sig.: Two tablespoonfuls to be taken three times daily after meals.

If gastric symptoms are prominent, the following may agree with the patient better:

℞.	Ferri sulphatis	gr. iv	24
	Sodii bicarbonatis	gr. x	60
	Sodii sulphatis	℥i	4
	Tinct. zingib	m. xx	1 20
	Spiritus chloroformi	m. viii	48
	Infusi quassiæ, ad	℥i	30

M. Ft. mist. Sig.: Two tablespoonfuls to be taken twice daily after meals.

Iron in some form is almost invariably indicated, yet it is well to remember that an alterative, arsenic, copper or mercury, will sometimes act much better than iron alone. It is surprising how rapidly many chlorotic patients improve on alterative treatment, even when there is no evidence whatever of specific disease. Arsenite of copper in doses of 1/100 gr. two or three times a day after meals, or the specific tincture of copper of the eclectics in doses of 3 to 6 minims will prove very efficacious. Fowler's solution (m. v to x) in water after eating; small doses of arsenous acid (1/100 to 1/60 gr.), or the solution of arsenic and mercuric iodid (5 to 10 minims), are all valuable in anemic conditions. Indeed, inunctions of a very small amount of mercurial ointment once a day, or every other day, or small doses of mercuric chlorid, from 1/60 gr. to 1/40 gr., are often of decided benefit in chlorosis.

Nearly every form of iron has been employed, the preference seeming to be for Blaud's mass.

The following prescriptions are all good:

℞.	Ferri et potassii tartratis		
	Liq. potassii arsenitis, āā	℥i	4
	Aquæ dest., q. s. ad	℥iv	120

M. Sig.: Five to ten drops in wine before meals twice daily.

℞.	Ferri et potassii tartratis	℥iiss	10
	Ext. cinchonæ	℥iiss	10
	Glycerini	℥v	20
	Aquæ dest.	℥iiss	10
	Vini (Madeira), q. s. ad	Oii	960

M. Sig.: Take as a tonic; wineglassful three or four times a day.

℞.	Ferri sulphatis	gr. xxiv	1 44
	Magnesii sulphatis	℥vi	24
	Acidi sulphurici aromatici	℥i	4
	Tinct. zingiberis	℥ii	8
	Infusi gentianæ comp., ad	℥viii	240

M. Ft. mist. Sig.: A sixth part twice a day.

℞.	Vini ferri amari	℥vii	210
	Tinct. nucis vomicæ	℥iv	16
	Liq. potassii arsenitis	℥ii	8

M. Sig.: Two drams in a wineglassful of water after meals.

℞.	Ferri sulphatis exscic.		
	Potassii carbonatis, āā	gr. xxx	1 95
	Ext. nucis vomicæ	gr. v	30

M. Ft. Cap., No. xx. Sig.: One three times daily, after meals.

The following formulas for pills are valuable where one wishes an iron laxative preparation, particularly where there is amenorrhea:

℞.	Ferri sulphatis exscic.	gr. xx	1 30
	Potassii carbonatis	gr. xx	1 30
	Myrrhæ pulveris	℥i	4
	Aloes socotrinæ	℥ss	2

M. Ft. pil., No. xxx. Sig.: Take two or three a day.

℞.	Ferri et sodii pyrophosph.	℥ss	2
	Extracti rhei	gr. xiv	84
	Extracti aloes	grs. viii	48
	Extracti taraxaci, q. s. ft. mass.		

M. Ft. pil., No. L. Sig.: Take two night and morning.

Intestinal antiseptics are as much needed as laxatives. The following prescription has been highly recommended as an intestinal antiseptic:

℞.	Creasoti (Beechwood)	mxxxvi	2 16
	Ol. gaultheriæ (Mercks)	mxxxvi	2 16
	Eserin salicylate	gr. 3/5	036
	Pancreatin	gr. lxxii	4 32
	Pulv. ext. cascara sag.	gr. xxxvi	2 16
	Pulv. ext. colocynth co.	gr. xviii	1 08
	Pulv. oxgall	gr. xxxvi	2 16
	Pulv. acaciæ		
	Aquæ		
	Glycerini		
	Pulv. glycyrrhizæ, āā, q. s. ft. caps., No. 72		

Sig.: One after each meal.

The sulphocarbolates are also excellent intestinal antiseptics and so is beta naphthol. This may be given in two-grain doses three times daily.

It is advisable in treating all cases of chlorosis to administer some intestinal antiseptic.

Often it will be necessary to give some cardiac tonic like digitalis or strophanthus.

NON-MEDICINAL.

Hydrotherapy is of the greatest value as an adjuvant to medicinal treatment. It cannot well be dispensed with.

Enteroptosis may be helped by a cold abdominal douche and by abdominal massage. Elimination of toxic waste matter may be facilitated by warm bath, electric light bath, or sun bath to beginning of perspiration, followed by short cold application by rubbing the patient with a mitten or coarse towel, with water at about 60°, or by giving the patient a cold douche of from 5 to 20 seconds' duration at temperature 70° to 60.° The temperature should be lowered 1 degree daily and the pressure increased. This is a powerful circulatory stimulant and combative of autointoxication as well as a powerful stimulant of vital resistance. Various general graduated cold procedures are invaluable.

For vasomotor spasm and visceral anemias such measures as the general Scotch douche, visceral douches, short percussion douches, alternate compress, etc., are very effective. Cold sponging over the spine and outside and inside of thighs increase elimination and stimulate circulation. Constipation may be relieved and peristaltic activity increased by drinking a glass of cold water, preferably carbonated water, before breakfast; small cold enema; fomentation over liver twice daily, followed by heating compress during interval; wet girdle at night; cold fan douche to abdomen; cold percussion douche to spine; abdominal massage.

General massage, properly given, is a valuable means of treating chlorotic patients who are unable to take active exercise. It acts by increasing the circulation of the blood, by strengthening the muscular system, as an eliminant of waste matter, as a stimulant to the digestive system, as a mild cathartic by increasing peristalsis, as a sedative to the nervous system and as a sleep producer.

Static and Faradic electricity will aid in the treatment of these cases. Faradism to the chest will stimulate respiration and oxygen inhalations will improve the quality of the blood.

Chlorotic patients should drink plenty of water. Under certain conditions water is a hematic. It washes away waste matter and paves the way for growth of new material. Chalybeate remedies may be rendered more effective by adding to them large draughts of water.

MENTAL.

The physician should get his patient into a cheerful, hopeful frame of mind. The hopefulness and optimism of the physician do far more than cure feeble minds and faltering wills. They assist in the cure of every disease he encounters. Alteratives and tonics for the mind are often quite as important and efficacious as alteratives and tonics for the body. Get the patient out of her introspective moods. Cheerful companions, a change of place and scenery, a visit to some chalybeate springs inspire the psychical impulses and form a great incentive to those who are despondent and prone to worry, to exert themselves, and so aid in their own recovery.

Tonics are both mental and material. Hope is a capital tonic. Depressing mental conditions often neutralize the best medical treatment. The prospect of recovery will often bring about satisfactory results almost in the absence of drugs, and certainly often helps out wonderfully a lame line of treatment. Mental tonics should always be combined with material tonics.

Collodion and Acetanilid Dressing.

Dr. F. G. Mohlan, Pueblo, Colo., writes calling attention to the fact that an excellent dressing—one that is aseptic, odorless, clean and white, as well as flexible and adhesive—is collodion, to which is added 5 or 10 per cent. of acetanilid. He says that he has used it for over six years with great satisfaction, in cases in which a collodion dressing is indicated.

The Treatment of Chronic Constipation.

In the treatment of chronic constipation, according to M. J. Krohn, in the *Denver Medical Times*, one must first ascertain the cause and so direct the treatment. He divides the treatment of chronic constipation into three classes: 1, The dietetic; 2, the mechanical; 3, the medicinal. The foods prescribed should be rich in water, and cellulose should be ordered. Thus graham or rye bread, all fruits, except persimmons, fresh vegetables, soups, fats, buttermilk, cider, etc., are of value. If there is gastric hyperexcitability the alkalies are indicated, while all concentrated foods are to be avoided.

If there be an enteritis, such foods as cauliflower, spinach, tender asparagus and mashed potatoes are permissible. He advises the habit of taking cold water before meals and on going to bed.

The mechanical treatment, according to Krohn, consists in massage, gymnastics, electricity, Swedish movements and the cannon-ball massage over the abdomen. Contrary to the opinion of some authorities, he recommends enemas and irrigations as very efficacious.

The medicinal treatment consists of such drugs as belladonna, jalap and cascara sagrada.

If there is a decrease of mucus, ammonium chlorid and sodium phosphate should be given; and when there is excessive hyperacidity, accompanied by constipation, the following combination is recommended:

℞.	Magnesiæ calc.	ʒss	15
	Pulv. rhei	ʒii	8
	Sodii carbonatis	ʒi	4
	Extracti belladonnæ		
	Extracti nucis vomicæ, ää	gr. ii	12

M. Sig.: One-half teaspoonful three times a day one-half an hour before meals.

If the constipation is associated with the absence of hydrochloric acid, the following combination is recommended by this author:

℞.	Acidi hydrochlorici dil.	ʒss	15
	Strychniæ sulphatis	gr. 1/3	02
	Tincturæ rhei q. s. ad	ʒvi	180

M. Sig.: One tablespoonful in a wineglassful of water three times a day, before meals and taken through a glass tube.

In those cases occurring in adipose individuals with a tendency to passive congestion of the intestinal canal and having a tendency to hemorrhoids, Krohn recommends the neutral salts, such as magnesium sulphate, sodium phosphate and sodium and potassium tartrate. The very drastic purgatives should be avoided.

F. E. Prewitt, in the same periodical, after enumerating the various causes of constipation, states that the medicinal treatment of constipation is of the least importance. Not infrequently the slightest change in the diet will overcome the constipation. Consequently, the diet should be carefully inquired into and carefully regulated, remembering that single articles of food, such as milk, may serve as a laxative for one person and tend to constipate another. In addition to giving a somewhat abbreviated diet list, he emphasizes the importance of instructing the patient to go to the toilet regularly each day at the same time, whether there is a desire or not, and at the same time advising him not to put in his time reading a newspaper or a book while at stool, but to keep his mind concentrated on the purpose for which he is there, and to remain there for fifteen minutes if necessary. He is of the opinion that vibratory massage will in time occupy a place in the treatment of constipation. Gymnastics are invaluable in the treatment of constipation, and can be carried out at home if a gymnasium can not be obtained. Of the medicinal preparations he regards cascara sagrada as the best preparation and jalap is considered next in order of efficiency and acts best as a rule combined with podophyllin and aloes and belladonna.

Inflamed and Protruding Piles.

The following combination is recommended by the same periodical in the treatment of inflamed and protruding piles:

℞. Cocainæ hydrochloratis .....gr. iiss
Sol. adrenalin. chlorid. (1-1,000).....f.3ss 2
Bismuthi subnitratis .....gr. x 65
Petrolati liq.....3i 30

M. Ft. unguentum. Sig.: Bathe the parts in cold water and apply the ointment after each stool.

Acute Nephritis in Scarlet Fever.

In the treatment of true nephritis following scarlet fever, Hughes-Bennett, according to an abstract in the *Med. Review of Reviews*, recommends the following combination:

℞. Potassi acetatis 3ii 8
Spts. etheris nitrosi f.3ss 15
Aquæ q. s. ad.....f.3ii 60

M. Sig.: A teaspoonful every two hours well diluted in water.

Or:

℞. Hydrarg. chloridi mitis.....
Pulv. scillæ
Pulv. digitalis, āā.....gr. ¼ to ½ .015-.030

M. Ft. pil. No. i. Sig.: One such pill every three or four hours.

In addition to the foregoing treatment, saline purgatives are recommended with hot-water or hot-air baths taken twice daily.

And in scarlatinal rheumatism some preparation of iron should be given alternating with the following combination:

℞. Ammonii salicylatis 3ii 8
Elix. simplicis
Syrupi simplicis, āā.....f.3ss 15
Tincturæ cardamomi co.....f.3i 30

M. Sig.: One teaspoonful well diluted in water four times a day.

Multiple Warts.

The following combination is recommended by the *Med. Review of Reviews* to aid in the removal of multiple warts:

℞. Chloralis hydratis
Acidi acetici f.3iss 6
Acidi salicylici
Spts. etheris nitrosi, āā.....f.3i 4
Collodii f.3iv 15

Misce. Sig.: Apply to the warts twice daily.

Medicolegal

Cross-Examination of Physician—Discrediting Evidence.

The Supreme Court of Washington says, in the personal-injury case of Williams vs. Spokane Falls & Northern Railway Company, that the plaintiff, no doubt, waived his privilege when he permitted a physician who had examined him in his professional capacity to give his testimony without making any objection thereto. But he had a right to discredit the witness by showing interest or bias in the case, and legitimate cross-examination was perfectly proper for that purpose. A wide latitude is usually, and should be, given on cross-examination, the extent of which must be governed largely by the discretion of the trial court. Such discretion will only be reviewed for abuse thereof.

The principal defense in this case was that the plaintiff was in a large measure simulating his injuries. The defendant's evidence tended to show that he was afflicted with what the physicians termed hysterical paralysis, and that the pendency of a lawsuit had a strong tendency to prevent improvement in such cases. Evidence with regard to the frequency of the visits to him at the hospital of the defendant's claim agent was received by the trial court on the theory that it had a tendency to rebut the evidence of the physicians by discrediting their statements that the plaintiff was suffering from hysterical paralysis, because under such circumstances the attending physicians would not have permitted the claim agent to visit the plaintiff. The Supreme Court holds that the evidence was admissible for that purpose, and for that reason only.

Power of State Association—Certificate Requirements.

The Supreme Court of Alabama says, in Brooks vs. State, that section 5333 of the code of 1896 reads: "Any person who practices medicine or surgery without having first obtained a certificate of qualification from one of the authorized boards of medical examiners of this state must, on conviction, be fined not less than $25 nor more than $100." Section 3262 says: "The standard of qualification, the method or system and the subjects of examination of practitioners of medicine shall be prescribed by the Medical Association of the State of Alabama and must be observed by the boards of medical examiners." It will be observed, the court continues, that the lawmakers have clothed the Medical Association of the State of Alabama with full authority to prescribe the rules and regulations governing the issuance of certificates to medical practitioners, and the Alabama statutes in this respect are not only intended as a means of maintaining a high standard in the ranks of the medical profession, but are designed to protect the public from imposition and fraud by authorizing the state medical association to prescribe the rules and restrictions governing the issuance of certificates to those engaged in or desiring to engage in the practice of medicine.

The state medical board adopted in 1899 the following ordinance: "Be it ordained by the Medical Association of the State of Alabama that hereafter all certificates conferring the privilege of practicing medicine in this state, issued by county boards of examiners, shall be countersigned by the senior censor of the state association before the same shall become legal and valid." It is to be noted, the court says, that every certificate issued by a county board after the adoption of the above had to be countersigned by the senior censor, else it would be invalid. The state proved a *prima facie* case against the defendant (party first named, who was convicted of a violation of section 5333, quoted above), who attempted to defend under a certificate issued by the county board, Jan. 29, 1900, but which had not been countersigned by the senior censor of the state, and which was insufficient, and an objection by the state to the introduction of same was properly sustained.

There was no error in sustaining the state's objections to the defendant's attempt to introduce a diploma or proof of the length of time he had practiced medicine. These facts may have been sufficient to authorize the county board to issue him a certificate without undergoing an examination, but could in no sense make valid a certificate not issued in conformity with the rules of the state association.

It was not competent for the defendant to show the action of the Medical Society of Marion County, since he did not show that it issued him a certificate prior to the adoption of the ordinance in 1899. Neither was it competent to show that other physicians had no certificates or had not stood examinations. If they were violating the law it did not justify the defendant in doing so.

Liability of Company Silent When Services Rendered.

The Supreme Court of Rhode Island says that the case of Nelson R. Hall vs. New York, New Haven & Hartford Railroad Company was brought to recover $1,573.75, with interest, for services rendered during a period of twenty weeks and for supplies furnished by the plaintiff, a physician and surgeon, to the defendant's employé, a carpenter, who was injured in the course of his employment at its power station in Warren, R. I., by steam and hot water in an accidental explosion. The company denied liability and claimed that it never engaged the services of the plaintiff. But it appeared that on the day after the accident the physician sent to New Haven, where the principal offices of the company were located, by the foreman under whom the man was working when injured, a report, stating that on the preceding morning he was called to the power station in Warren by the station agent to attend the man, naming him, who had been scalded by steam and hot water which came from condenser pipe. 'The scalds," the report continued, "appear to be of the second degree and involve both legs and the lower third of both thighs. The patient now suffers from prolonged shock and is much exhausted. . . . Trained nurse is in attendance." What the foreman did with the report did not appear, but at the trial the company produced it, and in the absence of explanation as to how or when

it obtained possession of the same it was not unreasonable to infer that it was delivered to the company with reasonable celerity.

What was the duty of the company in the premises? To let the physician remain ignorant of the truth of the invalidity of his employment in its behalf? To permit him to incur large expense and employ valuable time in a malodorous and repulsive employment in the faith that he would be compensated by a responsible company, while that company intended that he should be compelled to resort for payment to the nonresident injured mechanic, whose expenses would be greatly increased and whose resources would be greatly diminished, if not cut off, by this very accident, which would deprive him for a long time of the ability to perform his daily toil? The ordinary physician is not an eleemosynary institution, and, although he often does perform services for charity, it can not be expected that he will compete with the hospitals that are established for general public use. It was the duty of the company to early apprise the plaintiff of the true condition of affairs; to either disaffirm the act of its station agent in toto (entirely) or to explain the extent of his authority to the physician in order to give him the opportunity to make further arrangements for treatment of the patient beyond the time of any authorized limited employment. But the company did neither; it neither accepted nor rejected the services of the physician under his supposed employment, but it elected to remain silent.

The evidence also disclosed that on two occasions, the first of which was soon after the accident, the claim agent of the company and its physician visited the patient to ascertain if he was in a condition suitable for removal to a hospital, and after examination on each visit found that he was not. But no fault was found by them with the treatment that he was receiving. When the physician rendered his bill for $1,573.75, and on two later dates sent similar bills, no notice of them was taken by the company. Similar silence was maintained concerning the bills as was observed in the matter of the report.

Under these circumstances, whether or not the company ratified the act of its station agent in employing the physician to attend the injured man, the court holds, was a question of fact to be determined by the jury. As their verdict was for the physician, without any special finding, it might be safely assumed that they found a preponderance of evidence satisfying them of such ratification. This court can not say that the verdict in this respect was against the evidence. Moreover, the court says that, although the physician had rendered several bills to the company, each showing the amount charged by him for his services, for which this suit was brought, the company introduced no testimony tending to contradict that of the physician, who went into a minute and detailed explanation of the nature of his services and testified that the prices charged by him for the same were reasonable. In such circumstances the court is unable to say that the verdict was excessive.

Current Medical Literature

AMERICAN.

Titles marked with an asterisk (*) are abstracted below.

Medical Record, New York.

September 1.

1 Japanese Naval Sanitation. B. K. Takaki, Tokyo, Japan.
2 *Banti's Disease (Splenomegalia and Cirrhosis of the Liver). M. Einhorn, New York.
3 *Brief Résume of the World's Recent Cancer Research. W. S. Bainbridge, New York.
4 *Habitual Constipation, Viewed from the Standpoint of Modern Evolution of Dietetics, is a Physiological Phenomenon. C. D. Spivak, Denver.
5 *Acroparesthesia. W. W. Lesem, New York.
6 *Two Cases of Varicose Veins Successfully Treated with the X-Rays. J. C. McGuire, Washington, D. C.

2. Banti's Disease.—Einhorn has seen eighteen cases, which he has tabulated and placed in three groups: 1. Pure form; splenomegalia, anemia, cirrhosis of the liver, ascites. 2. Hemorrhagic form, showing in addition to the symptoms just enumerated, gastric and intestinal hemorrhages. 3. Splenomegalia, enlargement of the liver, anemia, sometimes associated with grave gastric symptoms. Treatment depends on the stage of the disease and the group to which it belongs. In some cases extirpation of the spleen may be considered. The *x*-ray treatment has given good results. Gastric hemorrhages should be treated according to the accepted rules. The physician may be a little bolder in giving food in these cases. Stomach symptoms should be combated and a strengthening diet is indicated. The administration of sodium iodid with iron and sometimes arsenic is generally followed by good results.

3. Résumé of World's Cancer Research.—Bainbridge states that cancer occurs with the same essential characteristics throughout the vertebrate creation. There is a variety of conflicting evidence in reference to the influence of diet on the development of cancer. However, cancer is comparatively rare in hot countries, especially in those whose inhabitants subsist largely on vegetable diet. With certain exceptions it seems to be prevalent where animal diet is mostly consumed. Black races are remarkably immune from cancer, yellow races are more prone to it, while the white races are the most susceptible. It occurs when the tissues are undergoing retrograde metamorphosis. Cancer is undoubtedly on the increase. The principal increase involves the alimentary tract. There are certain districts called "cancer belts." Such areas are usually low-lying and damp. Women are attacked by cancer far earlier and more often than men. Much recent experimental work points to the cell as the essential element in the development of cancer. The parasitic theory is discredited by the Harvard Commission. The report of the Imperial Cancer Research Fund destroys all known theories of the origin of cancer, but proposes no new theory. Surgical treatment has been established on a firmer basis than ever before.

4. Habitual Constipation.—Spivak summarizes his paper as follows: Habitual constipation in a great many cases is due to a mistaken diagnosis. The patient makes the diagnosis himself, based on his sensation only. Once the diagnosis is made, and then corroborated by the physician, it becomes an etiologic factor. The tendency of civilized life in general and of modern dietetics in particular is toward the production of lesser quantities of fecal matter and less frequent evacuation. There is no doubt that the habit of regularity is beneficial, but no one should allow every unusual sensation to become a source of morbid concentration. The treatment of habitual constipation should be directed more toward rectifying the errors of the mind than those of the body. The patient should be impressed with the fact that certain foods are better absorbed than others, and that it is not imperative for the preservation of good health to have a movement of the bowels daily, nor is the small quantity indicative of disease.

5. Acroparesthesia.—Lesem defines acroparesthesia as an affection of the peripheral nerves, characterized by burning, pricking, pins-and-needles, numb, crawling, itching or breaking sensations disturbed usually over the extremities. Not infrequently, however, the head, face, chest, back and abdomen are involved. The viscera are rarely affected. Among 200 cases seen by Lesem, 94.5 per cent. occurred in women. The majority of the patients were between the ages of 30 and 40 years. Circulatory and gastrointestinal disturbances appear to be the cause of the large majority of the writer's cases. Menstrual and puerperal disorders occurred in 12 per cent. Occupations such as tailoring and constant immersion of the hands in water occurred as an etiologic factor in 1 per cent. The symptoms vary with the intensity of the disease. The course of the disease is either short or it becomes chronic and progressively worse. The types most susceptible to treatment are those dependent on puerperal and climateric disorders and on autointoxication.

6. Varicose Veins Successfully Treated with X-Ray.—McGuire reports two cases. The first patient was a woman, aged 45, with eczema of both legs, complicated with varicose veins and an ulceration on the right leg. The ulcer resisted all treatment, until the application of the *x*-ray. This caused inflammation of the skin, which extended over the whole surface of the leg. The treatment was stopped for four days, when it was again tried. Inflammation resulted, but during the next five days, without the application of the *x*-ray, the dermatitis gradually subsided and by the end of the week had

disappeared. The ulcer completely healed and the varicose veins disappeared. The second patient was a man 50 years of age with a large bunch of varicose veins on the right leg. Treatment by the *x*-ray is gradually reducing the tumor and without causing any great reaction of the tissues. The rays cause contraction and atrophy of the tissues and those of low vitality easily break down.

Boston Medical and Surgical Journal.

August 30.

7 Contribution to the Chemistry of the Bacterial Cell and a Study of the Effects of Some of the Split Products on Animals. (To be continued.) V. C. Vaughan, Ann Arbor, Mich.
8 *Care of Far-Advanced Cases of Pulmonary Tuberculosis. S. G. Bonney, Denver.
9 Sub-pectoral Abscess. J. H. Musser, Philadelphia.
10 Fracture of the Fifth Metatarsal Bone by Inversion. F. J. Cotton, Boston

8. Care of Far-Advanced Cases of Pulmonary Tuberculosis.—Bonney summarizes his paper as follows: 1. About one case out of every four or five may reasonably be expected to exhibit a pronounced diminution of temperature by the end of a week or ten days. 2. The remaining cases do not show any bad results from its employment, other than those due to the occasional intolerance of the system for the serum of a horse. 3. This so-called reaction, which is independent of the specific nature of the remedy, but common to all other serum preparations, bears no relation to the ultimate results obtained. 4. Some cases show marked improvement in spite of temporary discomfort in the way of chills, fever, urticaria and painful swelling with stiffness of the joints, while others exhibit no improvement, although there is entire absence of constitutional disturbance. 5. Reaction may take place within twelve hours after the use of the serum or it may be delayed for six weeks. 6. Occasionally the improvement is delayed indefinitely until the occurrence of the reaction, following which there may be complete and enduring subsidence of the fever. 7. As a result of the serum the temperature either may subside to normal or may be reduced several degrees, remaining, however, somewhat elevated. 8. He has not been in favor of its continued subcutaneous employment, and has given, as a rule, not over four or five doses at intervals of one or two days and awaited results. 9. During the past nine months he has practiced the tentative administration of the remedy by the rectum for ten or twelve doses before resorting to its hypodermatic use, in order to avoid the discomfort which sometimes follows its injection into the tissues. 10. He has seen unquestionably good results attend its use even when streptococci were not found in the sputum, and believes that even under such conditions the clinical evidences of a persisting sepsis may sometimes afford, from a humanitarian standpoint, a warrantable basis for its use.

New York Medical Journal.

September 1.

11 Address on Climatology. E. L. Shurly, Detroit, Mich.
12 Use of the Pessary. H. A. Slocum, Philadelphia.
13 Treatment of Uterine Retrodisplacement. R. S. Hill, Montgomery, Ala.
14 Typhoid Infections of the Appendix. M. A. Austin, Anderson, Ind.
15 *Electrolysis in the Treatment of Deafness Due to Stricture of the Eustachian Tubes. D. G. Yates, New York.
16 Diagnosis of Tumors of the Stomach. J. J. Gilbride, Philadelphia.
17 Case of Little's Disease. A. Glascock, Washington, D. C.
18 Review of the Present Day Therapy of Pulmonary Tuberculosis. B. M. Randolph, Washington, D. C.
19 *Four Cesarean Operations and a Labor Complicated by Fibroma in which Hysterectomy was Performed on the Sixth Day of the Puerperium. J. Aspell, New York.
20 Is Nervous Dyspepsia a Disease from Generis? A. Rose, New York.

15. Electrolysis in Stricture of Eustachian Tubes.—Yates reports four cases of deafness due to stricture of the Eustachian tubes in which electrolysis was employed successfully. The apparatus consists of a gold wire, olive tipped, bougie attached by a cord to the negative pole of a galvanic battery of sufficient voltage to overcome the body resistance. Forty volts is strong enough. An ordinary hand electrode is connected with the positive pole of the battery and grasped by the patient. The Eustachian catheter, insulated by winding with rubber tissue, is placed in position and the ear inflated in the ordinary manner to make sure that the catheter is properly situated. The iodin, menthol and camphor vapor is used in inflation, and has a valuable influence in preventing infection. The bougie is now passed through the catheter and on through the tube as far as it will go without exercising force, and the current turned on until three to five milliampères are indicated by the meter. No stronger current is necessary. The sensations of the patient must also guide the surgeon, for pain should be avoided. Having engaged the stricture, the bougie is allowed to lie snugly in contact for a few moments, when it will be found possible to advance the point a short distance. This maneuver is repeated until the stricture is passed and the surgeon is satisfied that the tube is open, when the bougie is slowly withdrawn and the current turned off. Inflation should be performed before, but not immediately after the bougie is used, for fear that air should be forced through a possible puncture of the mucous membrane into the loose surrounding tissues and so set up a traumatic emphysema. Treatments with the bougie should be about ten days apart, with one or two inflations between.

19. Cesarean Section.—Aspell reports 5 cases. In 2 the existence of a deformed pelvis was the indication for Cesarean section. In 2 cases labor was complicated by the presence of a fibroma. In 1 of these cases the tumor did not obstruct the delivery, but in the uterine contraction, after the third stage, the tumor of its own weight obstructed the free discharge of lochia and became so great an irritant that its removal was imperative in the first week of the puerperium. In the second case the tumor was situated in the broad ligament.

Lancet-Clinic, Cincinnati.

August 25.

21 Prophylaxis and Treatment of the Summer Diarrheas of Children. A. Friedlander, Cincinnati.
22 *Measure for the Quantity of X-Rays. K. Dunham, Cincinnati.
23 Feeling for Fees. E. S. McKee, Cincinnati.

September 1.

24 Case of Banti's Disease. H. J. Whitacre, Cincinnati.

22. Measure for Quantity of X-Rays.—Dunham's instrument consists of a selenium cell, which is placed inside of a wooden pill-box and surrounded by tungstate of calcium. This and a volt meter are placed in series in a direct current of not less than 60 volts. When this is placed before an *x*-ray tube the tungstate of calcium is caused to fluoresce and the light derived from the fluorescence causes the resistance of the selenium cell to be reduced (as does any light). The fluorescence is, of course, much less powerful than a 15-candle power lamp. This lowering of resistance in the cell allows the current to flow more readily, and this can be directly measured by a very sensitive volt meter. The next instrument depends for its action on the fact that a 2 per cent. solution of iodoform in chlorform is very easily and uniformly affected by the *x*-rays. Its appearance when so treated varies from a light pink to a very dark reddish brown. The second instrument is as follows: The selenium cell and volt meter are put in series as before, but no fluorescent salt is used. The wooden box is removed and the cell placed in a light tight box. The resistance of the selenium cell is reduced by the electric lamp beyond a partition. The light must pass from a lamp to the cell through the bottle because of the small aperture. To make this doubly certain the opening is fitted with a small cylinder so that the rays must pass as desired. When it is desired to measure a given dosage all that is necessary to do is to fill the bottle, place it in the box and make the reading. The solution is clear and practically all the light passes to the cell. The resistance drops and the voltage as read on the meter goes up. The bottle is now removed, laid on the surface of the patient near the part to receive the irradiation. After the treatment it is quickly placed in the box and the reading taken. The quantity of *x*-rays will be read by the difference of the voltage before and after the exposure.

St. Louis Medical Review.

August 25.

25 Incessancy of Rhythmic Reiteration in Organic Matter. S. S. Wallian, New York.
26 Origin and Heredity of Matter. (To be continued.) J. Wright, New York.

University of Pennsylvania Medical Bulletin, Philadelphia.
August.

27 Clinical Study of Gastroptosis, with Special Reference to the Value of the Bismuth Skiagraph Shadow in Determining the Topography of the Gastrointestinal Tract. C. B. Worden, J. Sailer, H. K. Pancoast and G. G. Davis, Philadelphia.
28 *Peculiar Pressure Symptoms Due to Enlarged Tuberculous Bronchial Glands. T. S. Westcott, Philadelphia.

28. Pressure Symptoms Due to Enlarged Bronchial Glands.—The subject of this report first came under Westcott's notice when she was just past three months of age. The upper part of the chest was noticeably high and full. At the age of two months the baby began not to nurse well and the stools showed signs of indigestion. She breathed with effort. Examination of the lungs showed only a weakened respiratory murmur. Venous enlargements were noted over the anterior surface of the chest; the cheeks showed some stellate capillary venous enlargements and the larger veins about the eyes and on the temples were noticeably full and clearly marked. The evidences of intrathoracic pressure gradually became more distinct. An irregular fever appeared. Digestive disturbances became more marked. Cyanosis of the fingers and hands was constantly present in some degree. Death ensued one month later, the child being then four months old. At the necropsy both lungs were found thickly studded with miliary tubercles. At the root of the lungs, in such a position as to press on the trachea to some degree, but more particularly on the descending cava, was a mass of tuberculous glands the size of a pigeon's egg, the center one of which had broken down and contained about 20 minims of purulent fluid. A few scattered tubercles were found in the spleen. The other organs were not affected.

In discussing the possible origin of the infection in this case the mother stated that at the time of her confinement at the hospital a patient was dying of pulmonary tuberculosis in a room across the hall from her room. The fact that the child was only two months old and that the large bronchial gland showed advanced disease makes it certain that the original infection must have occurred soon after birth by inspiration.

Archives of Pediatrics, New York.
August.

29 *Multiple Rhabdomyoma of the Heart Muscle. J. H. M. Knox, Jr., and E. H. Schorer, Baltimore.
30 Etiology and Diagnosis of Tubercular Spondylitis in Infancy and Childhood with Fatal Coma Following the Administration of Alcohol, Chloroform and Ether Anesthesia for Diagnostic Purposes. J. H. Hess, Chicago.
31 Osteogenesis Imperfecta. E. D. Fenner, New Orleans.
32 *Case Simulating Peptic Ulcer. S. S. Adams, Washington, D. C.
33 Case of Acute Suppurative Thyroiditis, with Pressure Symptoms Relieved by Intubation. F. S. Meara and R. S. MacGregor, New York.
34 Further Observations on Citrate of Soda. J. W. Van Derslice, Chicago.

29. Multiple Rhabdomyoma of Heart Muscle.—The patient from whom Knox and Schorer obtained this specimen was only 7 months old. The tumors were situated in the myocardium and in the right and left ventricle, the latter being pedunculated.

32. Case Simulating Peptic Ulcer.—Adams reports the case of a girl, 11 years of age, who complained of a sudden severe pain in her stomach and soon vomited blood in large quantities. She vomited blood several times that day and incessant hiccough followed. Pain was less after vomiting, but persisted, and the abdomen remained very tender to touch. The patient did not vomit again, although slight nausea was present. A probable diagnosis of peptic ulcer was made, but Adams was of the opinion that the blood did not come from the stomach. The uvula of the patient was adherent to the right tonsil. Adams separated this adhesion after the patient had vomited the blood without exciting any bleeding. He inclined to the belief that the vomited blood came from the irritated fauces by a voluntary effort resembling hiccough. The clinical findings were opposed to the original diagnosis.

Montreal Medical Journal.
August.

35 *Case of Carcinoma of the Upper End of the Esophagus, with Perforation into the Trachea. J. Bell and J. McCrae, Montreal.
36 *Three Cases of Typhoid Fever with Unusual Complications. W. A. Molson and A. H. Gordon, Montreal.
37 Cerebral Tumor Simulating a Vascular Lesion. F. G. Finley, Montreal.
38 Malaria and Its Transmission. S. McGibbon, Forest, Ontario.
39 Case of Epidemic Meningitis of Twenty Hours' Duration. J. McCrae, Montreal.
40 Osteomalacia Associated with Lipemia. O. Klotz, Montreal.
41 Cerebral Complications Secondary to Nasal Disease. R. H. Craig, Montreal.

35. Carcinoma of Esophagus with Perforation into Trachea.—In the case reported by Bell and McCrae, a woman, aged 32, the tumor was situated in the upper part of the esophagus. Death ensued as the result of a bilateral aspiration pneumonia with abscess and gangrene of the lung.

36. Typhoid with Unusual Complications.—The three cases reported by Molson and Gordon presented features of blood destruction and were accompanied by convulsive seizures. One of the patients also had multiple subcutaneous hemorrhages.

American Medicine, York, Pa.
August.

42 *Influence of Rest, Exercise and Sleep on Gastric Digestion. J. Friedenwald, Baltimore, Md.
43 Pernicious Effects of Alternating Currents of High Voltage. F. H. Millener, Buffalo, N. Y.
44 *Intestine Surgically Considered with Special Reference to Its Sterilization. A New Open Method for Lateral Anastomosis. S. E. Sanderson, Detroit, Mich.
45 Typhoid Fever; Round Worms; Cholecystitis; Cholangitis; Hepatic Abscesses. C. W. Sharples, Seattle, Wash.
46 Mastoid Operations. T. H. Shastid, Marion, Ill.
47 Multiple Chancre. A. F. Büchler, New York.
48 Treatment of Cancer of Breast. B. MacMonagle, San Francisco, Cal.

42. Influence of Rest, Exercise and Sleep on Gastric Digestion.—As the result of a number of carefully conducted experiments Friedenwald arrives at the following conclusions: 1. In persons with normal digestive powers it makes but little difference whether the individuals rest, exercise or sleep after meals; though after violent exercise or sleep the gastric digestion is very slightly impaired. 2. In patients suffering with superacidity and subacidity it is best to order rest after meals; after violent exercise or during sleep the digestion is impaired in these cases. 3. In patients suffering with motor disturbances of the stomach, it is best to prescribe moderate exercise after meals, for rest, violent exercise or sleep disturbs the digestion under these conditions.

44. Lateral Anastomosis of Intestine.—Sanderson's method in some respects copies Connell's method. An opening is freely made into the lumen of the guy at both points where the anastomosis is desired. This opening may be linear or oval and should be large enough to equal, if not exceed, the lumen of the guy. A guy suture of silk or silkworm is passed in to hold the ends of the opening in approximation, two sutures being necessary. Beginning near one the bowels are sewed together from the mucous membrane side approximating the serous coats. The suture employed is a continuous right angle through-and-through suture, all work being done within the lumen of the intestine. Reaching the other guy suture, a knot is tied in the running suture and the guy suture is removed. The running suture is continued around to the starting point, as in the Connell method. The suture material to be used may be silk or catgut.

Journal of the Association of Military Surgeons of the United States, Carlisle, Pa.
September.

49 Importance of the Prevention of Infectious Diseases in the Navy, with a Suggestion as to the Prophylactic Treatment of Some of the Acute Exanthemata. H. G. Beyer, U. S. N.
50 *Treatment of Gonorrhea by Irrigation. W. G. Miller, U. S. Army.
51 Gonorrhea—Its Treatment from the Standpoint of a Military Surgeon. R. M. Thornburgh, U. S. Army.
52 Question of the Origin of the Lues Venerea Among the Conquistadores in Mexico. H. du Rest Phelan, U. S. Army.
53 Suggestion for the Greater Efficiency of the Organized Militia. C. S. Butler, Boston.
54 Calx Sulphurata U. S. P. as a Preventive of Yellow Fever. W. F. Waugh, U. S. N.
55 Otitis Media and Mastoiditis as a Sequel of Influenza. C. D. Center, Quincy, Ill.
56 *Treatment of Fractured Ribs. R. M. Woodward, P. H. and M.-H. S. of U. S.
57 An Emergency Case for Field Service. L. B. Almy, U. S. Army.
58 *A New First Aid Packet. W. M. Angney, Philadelphia.
59 Method of Artificial Feeding of Infants in the Tropics. L. T. Lewald, U. S. Army.

60 Personal Experience with Spinal Analgesia, and Its Application to Military Surgery. H. D. Thomason, U. S. Army.
61 Liver Abscess, with Special Reference to the Etiological Importance of Ascaris Lumbricoides. J. F. Leys, U. S. N.
62 *Peculiar Case of Appendicitis. W. N. Bispham, U. S. Army.

August.

63 Medico-Military Notes in Manchuria. J. V. Hoff, U. S. A.
63½ Status of the Hospital Ship in War. J. C. Wise, U. S. N.
64 Gunshot Wounds of the Abdomen. G. T. Vaughan, U. S. P. H. and M.-H. S.
65 Roll of Honor for 1904-05. Capt. S. C. Stanton, Chicago.
66 X-Ray in Military Surgery. H. H. Hartung.

50. Treatment of Gonorrhea by Irrigation.—Miller employs Valentine's method, except that during the first three days, when the urethra is highly inflamed and very sensitive, he uses only warm sterile water, which thoroughly cleanses the urethra and also allays the inflammation. After the mucosa becomes less swollen the germicide, which is then used, is more effective.

56. Treatment of Fractured Ribs.—After determining the nature of the fracture, Woodward scrubs the skin with alcohol or ether to remove all the oily material. The chest is then immobilized by strips of plaster. The plaster which he has found best for the purpose is that known to the trade as Z O plaster. The width of the strips to be employed varies according to the obesity or the reverse of the patient, but as a rule strips two inches wide are used. One of these is measured around the patient and cut of a length to reach from a point one inch beyond the mid-sternal line to a point one inch beyond the mid-spinal line. The other strips are cut the same length, about twelve pieces being necessary. The first strip of plaster is applied parallel to the ribs, i. e., from in front backward and upward, but is placed well below the point of fracture, in some cases nearly as low as the crest of the ilium. The front end is attached first, and then while making considerable tension on the strip, it is carefully and smoothly applied upward and backward to a point just beyond the spine. The second strip is attached in front at a point level with the nipple, and is passed downward and backward to a point in the lumbar region. The third strip follows the direction of the first, overlapping its upper half. The fourth overlaps the second, etc. The line of overlapping should fall directly over the seat of fracture. When completed, the chest should be strapped from a point slightly above the ilium to a point well into the axilla. A four-inch gauze bandage is now evenly applied over the entire chest and abdomen. This makes a soft lining for the starch jacket, which is next applied.

Crinoline used for starch bandages is of different qualities, and it is not always the most expensive crinoline which is the best for the surgeon's purpose. The most suitable quality is saturated with starch. It should be made into bandages four or five inches wide, not rolled too tightly. These bandages should be immersed in tepid water a few moments, but should not be squeezed much, as this wastes the starch. They are then applied over the gauze bandages, and like them form a jacket over the entire chest and abdomen. The crinoline should not be applied with much tension, as it shrinks in drying, and may prove too tight. If the crinoline is of proper quality each layer will agglutinate itself to the one underneath and the edges of the bandage will not curl up. Two safety pins in the end of the bandage are all that is necessary. To hold the jacket in its original position, Woodward makes suspenders by passing a three-inch muslin bandage over each shoulder, the ends meeting low down in front and behind. These are attached to the starch jacket by a series of safety pins. The patient is now placed on his back in bed until the jacket dries, when it will be found straight and smooth, and in this condition it will remain indefinitely. The jacket is not heavy or uncomfortable, and immediately on its application the patient feels a sense of security in taking a long breath without the fear of the sharp pain which he had before.

58. New First Aid Packet.—The dressing which Angney has adopted consists of two compresses, each three by three and one-half inches of gauze with absorbent cotton in the center; one is tacked permanently on the bandage; the other is placed loosely on the top of the first compress, and overlying the second compress are a few layers of loose gauze which can be used by a physician for tamponage. The compresses are dusted with boro-salicylic acid. When one wound is present, the double pad can be placed on it; if two are present or if the wound be a long one, then the compresses can be separated and placed in position. There is sufficient bandage to wrap around the leg in its widest diameter or for use around the trunk. The end of the bandage is split, which is a satisfactory method of fixing it in position. Two strips of adhesive plaster are added.

62. Peculiar Case of Appendicitis.—The subject of Bispham's report complained of severe pain in the back just below the articulation of the twelfth rib and spine on the right side, one inch from the column. The abdomen was not distended and there was no pain on palpation, except at the point mentioned where there was also some swelling, but no redness. He vomited only when food was taken. His bowels had not moved for several days. Acting on the supposition that there was pus somewhere beneath the localized area in the back, Bispham made a linear incision parallel to the spinal column and directly over the area of swelling and tenderness. A small hematoma was found, about the size of a pigeon's egg, in the latissimus dorsi muscle. This muscle was cut through, and the liver, kidney, colon and pelvis were examined carefully. Everything seemed to be normal, however, with no adhesions or exudates of any kind. The wound was closed and dressed. For the next few days the temperature went up and there appeared some tympanites with pain and tenderness over the right side of the abdomen. Owing to the patient's poor condition, no further operative procedure was undertaken until the third day, when the old incision was opened and several pus cavities were found in the muscular tissue of the back, next to the peritoneum. Further exploration revealed a perforation of the tip of the appendix and a localized peritonitis. There was also a small ulcerated hole through the peritoneum just beneath the appendix which communicated with the cavities in the back. The patient died shortly after the operation.

Ophthalmology, Milwaukee, Wis.

July.

67 Ocular Injuries from Glass and Stone. W. M. Sweet, Philadelphia.
68 Observations on Worth's Methods of Treatment of Convergent Squint in Young Children, with Presentation of Cases. L. Emerson, Orange, N. J.
69 Cure of Convergent Strabismus by Orthoptic Treatment at 20 Years of Age. H. V. Würdemann, Milwaukee.
70 A Secure, Looped, Single-Stitched Advancement Suture, with a Consideration of Scleral Anchorage. M. D. Stevenson, Akron, Ohio.
71 Antipyrin Keratitis. M. Inouye, Uchi-Saiwai-Cho, Tokio, Japan.
72 Effects of Full and of Minimum Doses of Atropin Sulphate and of Homatropin Hydrobromate. L. Howe, Buffalo.
73 Ophthalmic Subjects in Talmudic Literature. A. Brav, Philadelphia.
74 Monocular Visible Spasm of the Central Artery of the Retina. D. F. Harbridge, Philadelphia.

Journal of Nervous and Mental Disease, New York.

August.

75 Public Obligations of the Neurologist. H. R. Stedman, Boston.
76 Carcinoma of the Nervous System. W. G. Spiller and T. H. Weisenburg, Philadelphia.
77 Temporary Disappearance of the Sensory Symptoms in Syringomyelia. C. W. Burr, Philadelphia.
78 Sphincter Reflexes in Tabes Dorsalis and Paresis. C. F. Martin, Philadelphia.

Journal of the Kansas Medical Society, Lawrence.

August.

79 Prophylaxis of Typhoid with the Influence of the Soil, Fabrics and Flies in Its Dissemination. J. E. Foltz, Hutchinson.
80 Medical Organization. J. Dillon, Eureka.
81 Suggestion in the Treatment of Certain Psychoses. W. D. Toby, Salina.

St. Paul Medical Journal.

August.

82 Surgical Affections of the Patella. G. Schwyzer, Minneapolis.
83 Etiology and Pathology of Gallstone Disease. W. Lerche, St. Paul, Minn.
84 Diagnosis of Gallstones. J. Goodrich, St. Paul, Minn.
85 Surgical Treatment of the Gall Bladder and Bile Passages. J. T. Rogers, St. Paul, Minn.
86 Some General Considerations in the Treatment of Fractures by the Country Practitioner. Emil King, Fulda, Minn.
87 The Toxemia of Pregnancy. F. Leavitt, St. Paul Minn.

Medical Fortnightly, St. Louis.

August 10.

88 Cough—Extrapulmonary Causes of Cough, in Consequence of Pathologic Changes in the Upper Respiratory Tract, and Disturbances in the Function Thereof. J. C. Buckwalter, St. Louis.

89 Two Cases of Cancer Treated with Trypsin Infections and Lotio Pancreatitis Locally. R. H. Davis, St. Louis.
90 Senile Arterioscleroses. G. E. Rosenthal, Quincy, Ill.
91 Case of Aneurism of the Thoracic Aorta with Ulcer of the Esophagus and Perigastritis. W. H. Rush, St. Louis.

Brooklyn Medical Journal.

August.

92 Stomach as an Etiologic Factor in Disease. C. B. Bacon, Brooklyn.
93 Surgical Treatment of Obstinate Dyspepsia. W. F. Campbell, Brooklyn.
94 Significance of Albuminuria from the Insurance Standpoint. G. H. Pierce, Brooklyn.

Indiana Medical Journal, Indianapolis.

August.

95 Injuries to the Brain, Diagnosis and Treatment. C. E. Cottingham, Indianapolis.
96 How Progress Comes in Medicine. F. C. Shattuck, Boston.
97 Science and Art of Fitting Glasses. E. Davis, New York.

Interstate Medical Journal, St. Louis.

August.

98 Primary Retroperitoneal Sarcoma. J. C. Munro, Boston.
99 Injuries to the Diaphragm. W. C. G. Kirchner, St. Louis.

Journal of the Outdoor Life, Saranac Lake, N. Y.

August.

100 Sanatorium and Its Mission. A. J. Richer, Montreal.
101 Rest vs. Passive Exercise. J. T. Rothrock, Mont Alto, Pa.
102 Hints and Helps to Tuberculous Patients. C. L. Minor, Asheville, N. C.
103 Treatment of Pulmonary Tuberculosis. G. W. Goler, Rochester, N. Y.

Canadian Practitioner and Review, Toronto.

August.

104 Gastroptosis. G. Chambers, Toronto.

Journal Missouri State Medical Association, St. Louis.

August.

105 Anterior Vaginal Coeliotomy Incision. O. B. Campbell, St. Joseph.
106 Nervous System of the Child in Relation to Its Development. S. P. Child, Kansas City.
107 Apparent Cervical Menstruation. T. C. Witherspoon, St. Louis.

Journal of the Michigan State Medical Society, Detroit.

August.

108 Rural City Milk Supplies—Their Relation to Infant Feeding—Home Modification Versus Laboratory Feeding. A. M. Cook and D. M. Cowie, Ann Arbor.
109 Clinical Examination of the Infant's Stool. H. M. Rich, Detroit.
110 Use of Local Anesthesia in the Treatment of Rectal and Anal Disease. L. J. Hirschman, Detroit.
111 Medical Inspection of Schools. E. K. Herdman, Ann Arbor.

American Practitioner and News, Louisville, Ky.

August.

112 Proper Preparation of Plaster-of-Paris Casts in Treatment of Fractures of the Extremities. G. W. Griffiths, Louisville.
113 Thoughts on Uremia. C. P. Fox, Greenville, Tenn.
114 Temperature 92.8° Following Fracture of the Skull. W. O. Humphrey, Louisville.
115 Maternal Impression Superstition, and Why It Survives. E. T. Shelly, Atchison, Kan.

Medical Examiner and Practitioner, New York.

August.

116 Diseases of the Heart. Diagnosis, Prognosis. J. Nevins, Jersey City.
117 Recognition and Importance of Chronic Myocardial Disease. C. S. Williamson, Chicago.
118 Cardio-Vascular System from an Insurance Standpoint. W. F. Boggess, Louisville, Ky.
119 Heredity as a Factor in Life Expectancy. J. M. French, Milford, Mass.
120 Two Factors in Life Insurance; Medical and Family Histories of the Applicant. W. W. Pennell, Mt. Vernon, Ohio.
121 Dangers of the Potters' Trade from the Life Insurance Standpoint. H. G. Norton, Trenton, N. J.
122 Treatment of Dysmenorrhea. M. Jacoby, Mannheim, Germany.

Virginia Medical Semi-Monthly, Richmond.

August 24.

123 Consideration of Serious Surgical Emergencies. J. A. Day, Jacksonville, Ill.
124 Treatment of Placenta Prævia by Cesarean Section. A. P. Condon, Omaha, Neb.
125 Wandering Parasitic or Aberrant Retroperitoneal Uterine Fibromata. I. S. Stone, Washington, D. C.
126 Preliminary Tracheotomy to Operations About the Tongue and Pharynx. B. G. Copeland, Birmingham, Ala.
127 Arsenicum. H. B. Miller, Lincoln, Neb.

Journal of the South Carolina Medical Association, Greenville.

August 21.

128 Management of Acute Diffuse Septic Peritonitis. Le G. Guerry, Columbia.
129 Scarlet Fever. W. L. Kirkpatrick, Pacolet.
129½ Diagnosis of Obstructive and Nerve Deafness and Classification of Each. L. O. Mauldin.
130 Mountain Sickness as Observed in the Andes. F. A. Coward, La Paz, Bolivia.
131 Negroes and Malaria. R. Wilson, Jr., Charleston.

Journal of the Minnesota State Medical Association and the Northwestern Lancet, Minneapolis.

August 15.

132 Surgical Opportunity. C. H. Mayo, Rochester.
133 Retroperitoneal Sarcoma. W. D. Sheldon and J. F. Corbett, Minneapolis.
134 Acute Gonorrhea in the Male. F. R. Wright, Minneapolis.
135 Microscope in Diagnosis. J. J. Catlin, Buffalo, Minn.

FOREIGN.

British Medical Journal.

August 18.

1 *Pulmonary Edema. F. J. Wethered.
2 *Acute Nephritis (Morbus Brightii). A. G. Gullan.
3 *Food and Food Preservatives. R. Jones.
4 Direct Examination of Esophagus and Upper Air Passages. D. R. Paterson.
5 *Human and Bovine Tuberculosis. N. Raw.
6 Case of Sudden Death Possibly Due to Vagus Inhibition. E. D. Telford.
6½ *Bacterial Action of Compounds of Silver. C. R. Marshall and F. F. M. Neave.

1. Pulmonary Edema.—Wethered discusses the clinical history of this condition, with special reference to its causes.

2. Acute Nephritis.—In this paper Gullan takes up particularly the treatment of nephritis. To produce a free diaphoresis he prescribes the followig mixture:

Tincture of jaborandi	m. xxx	2
Sodium benzoate	gr. xv	1
Chloroform water	ʒi	30

M. Sig.: One ounce every four hours.

3. Food and Food Preservatives.—Jones' paper is based on the report of the London departmental committee on food preservatives made in 1901 and is largely a review of what has been published before.

5. Human and Bovine Tuberculosis.—Raw reiterates his previously expressed views on this subject, namely, that human and bovine tuberculosis are distinct varieties of disease, but that the human body is susceptible to both, and especially to bovine tuberculosis in the milk-drinking period of life. He is at present collecting the blood of animals, killed for tuberculosis, the serum of which, after careful preparation, he proposes to use in vaccinating children whose parents died of phthisis, with a view to protecting them against that disease.

6½. Bactericidal Action of Compounds of Silver.—An important investigation was recently undertaken under the authority of the therapeutic committee of the British Medical Association by C. R. Marshall and E. F. Macleod Neave to determine the comparative value of the various compounds of silver as bactericides and antiseptics. The following preparations were examined:

	Percentage of silver.
Collargol	86.6
Silver fluoride	81.7
Silver nitrate	63.6
Itrol	60.8
Actol	51.5
Argentol	31.2
Ichthargan	27.1
Argyrol	20.0
Albargin	13.4
Nargol	9.6
Largin	9.4
Novargan	7.9
Protargol	7.4
Argentamine	6.4
Argonin	3.8

The solutions for experiment were made each to contain a definite percentage of silver so that comparisons are made between strengths of the different preparations containing equal percentages of silver. Bactericidal power was determined by noting the percentage of silver necessary to destroy organisms in a mixed culture obtained by allowing uncooked beef to stand in water in an open vessel for four to six weeks. Experiments were also made with a pure culture of *Staphylococcus pyogenes aureus*. The antiseptic action was tested (1) by observing the time taken by minced cooked beef to putrefy in presence of solutions of silver compounds of known strength, (2) by inoculating an agar medium containing a definite quantity of

the various silver compounds. The power of diffusion of the various compounds was tested by immersing glass tubes filled with coagulated agar and inoculated with *Staphylococcus pyogenes aureus* in solutions of the various silver preparations and observing the distance to which the silver penetrated, as shown by visible discoloration and also by the antiseptic action. Argyrol excelled the other preparations in diffusion power.

The authors conclude with the following summary: The experiments show that as regards bactericidal action the various silver compounds investigated fall into three groups: 1, Those which are powerfully bactericidal; 2, one—nargol—much less powerfully bactericidal; 3, two—argyrol and collargol—which possess practically no bactericidal action whatever. The first group includes most of the substances investigated, namely, silver nitrate, silver fluorid, actol, itrol, argentamin, argentol, albargin, argonin, ichthargan, largin, novargan and protargol. The bactericidal action of these in solutions containing the same percentage of combined silver is closely similar, and it is practically impossible to place them in any order of activity which would be true under all circumstances. As argyrol and collargol are not bactericidal, it is evident that the amount of silver which a compound may contain is no criterion of its bactericidal power. Moreover, in view of the results obtained with argyrol, it seems impossible to attribute the good effects which many clinicians have obtained with it to its bactericidal action.

The Lancet, London.

August 18.

7 *Treatment of Cancer of the Stomach. A. W. M. Robson.
8 Public Supply of Pure or Specially Prepared Milk for the Feeding of Infants. C. F. McCleary.
9 Infantile Mortality and the Employment of Married Women in Factory Labor Before and After Confinement. G. Reid.
10 *Increase of the Power of Local Authorities with Regard to Milk Supply. A. K. Chalmers.
11 *Sterilization of Tuberculous Sputum and Articles Infected by the Tubercle Bacillus. T. Kirkland and M. S. Paterson.
12 Observations on the Life History of Leucocytes. C. E. Walker.
13 Acute Lobar Pneumonia in a Pygmy. W. H. Gregory.
14 Internal Secretion and the Ductless Glands. S. Vincent.
15 Frictional Electricity: A Factor in Caisson Disease. G. W. F. MacNaughton.
16 *Observations on the Action of Strontium Salts on the Coagulability of the Blood. J. B. Nias.
17 Note on the Structure of Spirochæta Duttoni. J. W. W. Stephens.

7. **Cancer of Stomach.**—Robson emphasizes the importance of an early diagnosis of cancer of the stomach in order that a radical operation may be performed at the earliest possible moment. If necessary, an exploratory operation should be done, even in cases where the disease is advanced and a tumor is perceptible. When the disease is too extensive for any radical operation to be done, the palliative operation of gastroenterostomy is indicated. It can be done with very small risk and may considerably prolong life. Robson has found that some cases, thought to be cancer, too extensive for removal, have cleared up after a gastroenterostomy, the patient getting quite well. In cases of disease of the cardiac end of the stomach too extensive for removal, the operation of gastrostomy may considerably prolong life and prove of great comfort to the patient by preventing death from starvation. Even where the disease is too extensive either for removal or for a gastroenterostomy, the operation of jejunostomy may prove of service to the patient. Where a radical operation can be performed, the thorough removal of the disease may bring about as much relief to the patient as does the operation for the removal of cancer of the breast, uterus, and other organs of the body. In some cases a complete cure may follow.

10. **Improved Milk Supply.**—The object of Chalmer's paper is to consider what alteration in existing legislation seems to be necessary to enable local authorities to insure the provision of a pure milk supply in the city of Glasgow.

11. **Sterilization of Tuberculous Sputum.**—Kirkland and Paterson describe the method employed at the Brompton Hospital. To sterilize sputum an iron vessel is used which is provided with a movable lid and which has at the bottom two steam jets so arranged that a circular motion is given to the contents. The sputum having been poured into this vessel, the lid is screwed down and steam is allowed to enter until a pressure of 15 pounds has been obtained. The contained sputum is allowed to boil under the action of steam for a period of 20 minutes, after which it is allowed to cool to a temperature somewhat above 100 F. and is emptied into the drain by opening a valve in the bottom of the sterilizer arranged so that all the contents can drain away. For cleaning the sputum pots they employ a large iron tank having the necessary valves for admitting water and steam and a valve in the bottom of the tank through which the contents could be emptied into the drain. Inside the tank is a cage which can be raised out of, or lowered into, the tank at will. This cage is constructed of brass tubes framed and braced together. On the horizontal tubes the sputum cups are suspended by their handles and the covers of the cups are placed in suitable trays provided in the cage. For the purposes of sterilization and cleaning, the cage full of soiled sputum cups and covers is lowered into the tank. Water is admitted into the tank and boiled by the admission of steam. After boiling for 20 minutes this water is emptied and the process is repeated. The cage is then raised and the cups and covers are removed. By this method much less handling of the cups is required and the cleaning of both cups and covers is found to be more thoroughly performed than when washed by hand. The saving of time effected by this method of washing the cups enables the same staff as was formerly employed in collecting and washing the cups to wash the handkerchiefs in addition. The soiled handkerchiefs are conveyed from the wards in covered pails and are at once placed in the sterilizing and washing machine, where they are first sterilized and afterwards washed. After washing they are taken out and placed in the hydro, which, with the calender, is in a separate room. After being dried in the hydro they are passed through the calender and are then folded and returned to the wards.

16. **Action of Strontium Salts on Coagulability of Blood.**—From personal experiments Nias is convinced that the lactates of strontium and magnesium, in doses of from 1 to 2 grams, are serviceable substitutes for the salts of calcium when the latter are not absorbed from the alimentary canal.

Journal of the Royal Army Medical Corps, London.

August.

18 Prevalence of Mediterranean Fever Among British Troops in Malta, 1905 (To be Continued). A. M. Davies.
19 Health of the Soldier; With Special Reference to Preventable Diseases. H. J. Barratt.
20 *Rapid and Practical Method of Diagnosing Typhoid Fever. L. W. Harrison.
21 *Rider's Sprain. P. G. Levers.
22 Removal of Wounded in Hill Warfare; A Method Lately Introduced into Practice in the 30th Punjabis. W. W. Jendwine.
23 Inspection of Tinned Foods. W. W. O. Beveridge.
24 South African Stock Diseases. D. Bruce.
25 Internal Anatomy of Stomoxys. F. M. G. Tulloch.
26 Hints Regarding the Management and Use of X-Ray Apparatus (To be continued). F. Bruce.

20. **Diagnosis of Typhoid.**—Harrison suggests the routine examination of the blood by culture as a rapid means of diagnosing typhoid fever. The method should be applied to every case of fever. The method employed is as follows: The patient's arm, at the bend of the elbow, is cleaned with soap and water, turpentine, 1 in 1,000 solution of perchlorid in rectified spirit, and ether rubbed on; ether is then dropped on from a drop bottle every few seconds till the puncture is made. The vein is made prominent, as for venesection. During this time an antitoxin syringe of 10 c.c. capacity is being sterilized by filling with oil at 160 C. As soon as the syringe has cooled down to the temperature of the hand, the needle is given a final dip in the oil to destroy any germs which might have fallen on its point during the cooling of the syringe barrel, and is then, almost at once, run into the vein. The puncture of the vein is very simple; the needle is kept almost parallel with the vein, the point is run through the skin and pushed steadily on; the eye of the needle should look upward and the point is bound to enter the vein. The syringe is filled by withdrawal of the piston and the needle withdrawn from the vein. A flask of 500 c.c. of broth is opened in the usual manner, and after expressing a few drops of the blood to wash off any germs which might have fallen on the eye of the needle during the

necessary interval between withdrawal of the needle and opening of the flask, the whole of the 10 c.c. of blood is forced into the broth and the flask replugged. The flask of broth with the patient's blood is then put into an incubator and kept at a temperature of 37 C. In a successful result, after 20 hours, the broth is often found to be turbid, particularly if the culture is made early before agglutinins and bactericidal substances have developed in the blood. A loopful of the turbid broth is put out on a slide, covered with a slip, and examined with an eighth-inch objective. If motile bacilli are seen, a portion of antityphoid serum, of which the maximum agglutinating power has previously been ascertained, is suitably diluted with distilled water, a loopful of the diluted serum placed at the edge of the slip, and the effect watched. If agglutination occurs, one is in possession of the information that a patient admitted with fever has a motile bacillus circulating in his blood, which bacillus is agglutinated by a suitable dilution of antityphoid serum.

21. **Rider's Sprain.**—Ievers insists that rider's sprain deserves a most careful study, both as to its causation and treatment. The muscle engaged is not what is sometimes erroneously called the "tailor's muscle," but the adductor longus, which may be affected to any extent, varying from a slight sprain to more or less complete rupture of the muscle and its sheath or tendon. In severe cases the point usually torn is at its insertion into the rami of the pubes. The sheath of the muscle may be completely severed in addition to its tension, and the belly of the muscle forming a large tumor in the upper or inner third of the thigh; more often than not it is in the right thigh that the muscle gives way, and when there is much laceration one often finds very extensive ecchymosis extending in all directions from the part immediately implicated. The cause is usually owing to the extra effort occasioned in keeping one's seat, either in taking a fence, when the horse happens to peck badly, or when in jumping a high wall the horse unexpectedly attempts to change, thereby causing the rider a sudden jar, the extra strain being sufficient to cause the muscle to give way. In the treatment, Ievers advocates a somewhat similar procedure to that of a fractured bone. He has, therefore, advised an appliance for this purpose, formed of the stoutest elastic band made, which should be five inches in width, stiffened by a couple of slips of whalebone let in at intervals, and cut so as to envelop in its circumference the upper portion of the thigh, taking care that the opposite ends do not approximate by two and one-half inches, so as to admit of the required stretch to get a good grip when fastened by means of three straps and double or whole buckles on outer aspects of thigh. Further, it is essential that the upper edge of band be brought right up to the fork. A suitable pad should be inserted inside the elastic band over the seat of injury, and finally a soft leather strap, similar to a bridle rein, should be attached to a stud or buckle on upper and outer edge of appliance, then brought round the body and crossed so as to form a figure-of-eight over hip of side affected, and also fastened to a separate buckle attached to elastic band. By this means the great drawback of most appliances, i. e., the tendency to slip down, is effectually prevented. With this appliance on, the patient is made quite comfortable and could almost at once commence riding.

The Dublin Journal of Medical Science.

July, 1906.

27 *Further Series of Enucleations of the Prostate. Sir William Thomson.
28 Notes on the Training of the Voice. H. Law.
29 Treatment of Eustachian Deafness. A. Cresswell and G. Cresswell.

27. **Enucleation of Prostate.**—Thomson reports on 18 cases in which the prostate was removed by the suprapubic method. The ages of the patients varied from 53 to 76. There were five deaths in this series. One was due to ether bronchitis and occurred in a patient 75 years old, who also suffered from mitral disease. Another man died 14 days after operation from a suddenly developed peritonitis. The third death was due to sepsis and occurred within 24 hours. Another patient died 12 weeks after operation from gangrene of the right lung. The last death was due to a pelvic cellulitis.

Presse Médicale, Paris.

30 (XIV, No. 62) La présence de colloïdes dans l'eau de boisson de Paris et dans les eaux minérales (in drinking water). H. Iscovesco.
31 Le radium au point de vue physiologique et thérapeutique. H. Dominici.
32 *Les torticolis d' origine otique. R. Leroux.
33 (No. 63). Traitement des broncho-pneumonies graves par les abcès de fixation. P. Daireaux.
34 *Radioscopic Study of Infant's Stomach. L'estomac du nourrisson. Forme; limite inférieure; mode de remplissage et d' évacuation. G. Leven and G. Barret.
35 *Spoons.—Cuillers. A. Martinet.

32. **Wryneck from Otitis.**—Leroux reviews the history of torticollis resulting from some lesion in the ear or complications, since Gellé first called attention, in 1894, to its possibility. In many cases the torticollis is due to neuritis of the spinal accessory nerve, as he had occasion personally to observe in 2 patients. After a suppurative otitis, the sterno-cleido-mastoid and trapezius muscles showed signs of paralysis and atrophy. In tests in which wax was injected in the cadaver at the points where pus usually presents in a suppurative process in the ear, the spinal accessory nerve was always found encircled by the wax, showing the almost unavoidable involvement of this nerve in such a process. If examination fails to reveal signs of mastoid or glandular suppuration, thrombophlebitis of the jugular vein may be suspected, as the spinal accessory nerve almost forms part of the wall of this vein, or the torticollis may be traced to meningitis. In the absence of signs of any of the above, examination of the blood may reveal latent suppuration or an extradural abscess. When the torticollis is the only symptom observed, it suggests that the nerve is involved only in its cervical portion, and only the external branch. Laryngeal disturbances are liable when both branches are involved. In some cases the patient becomes deaf after or during torticollis without ever exhibiting any symptoms pointing to the ear. In others there are no ear symptoms, but suddenly violent cerebral symptoms follow the torticollis. In every case of wryneck careful examination should be made of the ear.

34. **Radioscopy of Infant's Stomach.**—Among the interesting findings reported was the lack of any time difference between the emptying of the stomach after ingestion of breast milk and of diluted cow's milk. The evacuation proceeds progressively, and with quantities between 80 and 175 c.c., requires from an hour and three-quarters to two hours before it is completed.

35. **Spoons for Medicines.**—Martinet suggests various ways in which physicians can be sure that their patients are getting uniform doses of medicine. Spoons vary widely in size and capacity and cause irregular dosage. A good remedy would be to prescribe only the amount needed for the 24 hours, to be taken in four portions. Graduated medicine glasses, he says, are inaccurate, for mechanical reasons, which he cites. He accepts as the best remedy the use of an inexpensive semi-spherical spoon, 3.82 cm. in diameter, to hold 15 c.c., the handle straight, the spoon to be made of aluminum or something of the kind, and to be presented by the druggist with each filled prescription.

Revue de Chirurgie, Paris.

Last indexed, page 156.

36 (XXVI, No. 7). *Le traitement chirurgical des anévrysmes de l'artère sous-clavière. M. Savariaud.
37 Déformation de l'epine de l'omoplate (scapula). C. Féré.
38 *Des fistules gastro-cutanées. M. Patel and R. Leriche.
39 Amputation osteoplastique femoro-tibiale (dite de Sabanieff). Étude cadavérique. L. Chevrier.
40 L'énucléation incomplète du scaphoïde. C. Capillery and M. Ferron.
41 *Technique opératoire de la pyloro-gastrectomie pour cancer. R. Leriche.
42 (No .8). *Des luxations du poignet compliquées d'issue des os (dislocations of the wrist complicated by protrusion of bones). Conteaud.
43 *Résection totale des saphènes dans le traitement des varices superficielles des membres inférieurs. Terrier and Alglave.
44 *Contribution à l'étude du cancer du rectum. Son traitement. (Continued). Martin du Pan.

36. **Aneurism of the Subclavian Artery.**—Savariaud reviews the results of operative treatment of aneurism of the subclavian artery during the last 20 years. Treatment differs as the aneurism is exclusively outside of the scalenus muscle, or partly inside and partly outside. In the latter case surgical

measures are too dangerous, as the ligature would have to be applied so close to the heart. The Brasdor technic of peripheral ligature, above and below the aneurism, is preferable. The mortality is nearly zero, while the remote results are often surprisingly excellent. Nine cases in which this treatment was applied all resulted in an operative cure, without any mishap. In 22 cases of extrascalenic aneurism, treated by incision, extirpation or ligature of the second or third part, there was only a single death for which the operation was in any way responsible. In 20 cases of extrascalenic and intrascalenic aneurism there were only 9 operative cures, with 3 recurrences and 8 deaths. Out of the total material of 56 cases in which an operation was attempted, there were 41 operative cures and 10 deaths. Gelatin treatment was unable to effect a permanent cure in the 4 cases in which it was tried. One patient was reported cured by the gelatin, and the case is handed down in the records as cured, although operative treatment was required later, and it figures also as a surgical case. The motor disturbances seemed to be aggravated by the gelatin in Savariaud's own case. Gelatin should be given a trial before surgical measures, without fail, as it certainly is harmless and has quite a number of improvements and cures to its credit. It is especially indicated when operative measures are liable to prove too serious, as, for instance, when the lower two-thirds of the subclavian are involved. The details of the various cases are summarized.

38. Fistulæ Following Gastric Ulcer.—Patel and Leriche here give the particulars of 6 cases of gastrocutaneous fistula following an ulcer. If the fistula is located high, the discharge from it is intermittent and there is not much disturbance of the general health. Medical measures should be given a thorough trial, and if they fail the best treatment is by resection of the ulcer with suture of the stomach walls. When the fistula is located low, the discharge is practically continuous and the general health soon suffers. Resection and suture are inadmissible, the authors state, for obvious reasons, and palliative operations, such as duodenostomy and jejunostomy, are serious and insufficient. Direct suture should be attempted, although it does not always prove successful.

41. Pylorogastrectomy for Cancer.—Leriche gives a detailed description of the technic by which the duodenum is mobilized as a preliminary to resection of the stomach. The various steps of the operation are shown in 8 illustrations.

42. Dislocation of the Wrist with Protrusion of Bones.—Couteaud warns against amputation in such cases, as a mutilated hand is worth far more than an artificial one. Resection is better than amputation, and reduction alone is better still. Resection of the dislocated bones of the carpus is necessary, he states, and tardy resection of the bones of the wrist is the last resort. Protracted antiseptic baths are indispensable, with mobilization and massage at the earliest possible moment. Radiograms of patients treated on these principles show excellent healing without ankylosis.

43. Total Resection of the Saphena.—The first part of this article by Terrier and Alglave was reviewed on page 156. This part gives the history of 21 cases, with 35 illustrations. The technic includes the total resection of the saphenous veins in treatment of superficial varices and ulcers of the leg and thigh, sometimes of both legs. The results were extremely gratifying.

44. Cancer of the Rectum.—Du Pan reviews 123 cases of cancer of the rectum, treated by Kocher between 1873 and 1904. Of this number, 40 proved inoperable and only palliative measures were attempted, but 83 patients were treated by extirpation of the rectum. Kocher does not accept adhesion to the prostate as a true contraindication. About 41.67 per cent. of the patients—a total of 20—have had no signs of recurrence to date, but 5 have succumbed to an intercurrent affection and only 15 are alive at present, some of them 11 years after the operation. His proportion of long survivals is thus 25.75 per cent., while other European surgeons report only from 5 to 18 per cent., with the single exception of Hochenegg, who has 21 surviving out of 84, that is, 25 per cent. Kocher advises as the best technic that which includes fixation of the central stump to the anus with or without invagination in the peripheral stump denuded of its mucosa. The peritoneum should be carefully sutured, not tamponed nor drained. The after-treatment should be extremely solicitous, with constant supervision. At the slightest sign of infection, opening up the wound and irrigating give the best results. He ascribes his freedom from heart failures to the use of ether instead of chloroform. Local recurrence was observed only in 39.7 per cent., generally in the perirectal tissue. Recurrence operated on at once gave excellent results. One of the patients, a woman, is still in good health after fifteen years, although she has been operated on four times for recurrence. Frequent examination is necessary, as recurrences rapidly become inoperable. Metastasis in the liver occurred only by way of the veins, and only when gaping vessels were left into which the cancer cells could then find their way. Hemostasis should be immediate and as complete as possible, avoiding leaving any bone surface in the operative wound. Spontaneous metastasis in the liver was observed only when there had been some complication in the vascular system.

Semaine Médicale, Paris.

45 (XXVI, No. 33.) *Parallelism between Condition of Blood and Condition of Bone Marrow in Pernicious Anemia..—Du parallélisme entre l'état du sang et l'état de la moelle osseuse dans l'anémie pernicieuse. C. Aubertin.
46 *L'hypothermie migraineuse chez les tuberculeux. C. Mantoux.

45. Parallelism Between the Condition of the Blood and That of the Bone Marrow in Pernicious Anemia.—Aubertin does not refer to the quantity of the blood, but to its composition, and he states that examination of the blood is an infallible index of the condition of the bone marrow, as he describes in detail.

46. Migraine and Hypothermia in the Tuberculous.—Mantoux has had occasion o observe 4 tuberculous patients with attacks of migraine at which times the temperature was subnormal. The tuberculous are extraordinarily sensitive to all causes which send the temperature up or down.

Deutsche medizinische Wochenschrift, Berlin and Leipsic.

47 (XXXII, No. 29.) Die Behandlung der Verlagerungen des Uterus (displacements). Schatz. Clinical lecture.
48 *Inflammation of Extradural Tissue of Spinal Cord in Epidemic Cerebrospinal Meningitis.—Pachymeningitis spinalis externa acuta aut cellulitis perispinalis acuta. R. Peters.
49 *Ueber traumatisch-chirurgische Facialislähmungen (paralysis). L. Jacobsohn.
50 *Die Resektion der Nasenscheidewand bei primärer Tuberculose (of nasal septum). A. Onodi.
51 Foreign Bodies in Urethra and Bladder.—Fremdkörper in Harnröhre und Blase. M. Weinrich.
52 Ueber missed labour (missed abortion). M. Plaut.
53 *Ueber Menstruationsfieber, menstruelle Sepsis, und andere während der Menstruation auftretende Krankheiten infektiöser resp., toxischer Natur (menstruation fever, etc.). (Concluded.) G. Riebold.
54 Yeast for Cutaneous Affections.—Ueber Hefebehandlung bei Hautkrankheiten. E. Saalfeld.
55 Nucleated Red Corpuscles.—Ueber kernhaltige rote Blutkörperchen und deren Entwicklung. C. S. Engel.

48. Inflammation of Extradural tissue in Meningitis.—Peters discusses this subject from various standpoints and expresses his conviction that the lesions are induced by toxins in the blood. Direct propagation of the lesions is much less probable.

49. Surgical Traumatism and Facial Paralysis.—Jacobsohn states that in the 6 cases of traumatic peripheral facial paralysis which he has encountered in the last few years, there was a history of an operation on the head in every instance. Köster has also reported 6 similar histories in 8 cases of traumatic facial paralysis. Jacobsohn reviews the experience of other surgeons in this line, and gives the particulars of 2 cases in which resection of the trigeminus was followed by tardy paralysis. In one case, at least, he thinks that the paralysis might have been avoided by more cautious technic. Harvey Cushing's modification of the Hartley-Krause technic for removal of the Gasserian ganglion he accepts as a great advance, rendering consecutive paralysis much less probable. Better still would be the avoidance of any operation if equally good results can be obtained by stretching the nerve. This should be given a thorough trial. If an operation is considered necessary, the surgeon should endeavor to refrain from cutting the branches of the facial nerve.

50. **Resection of Nasal Septum for Primary Tuberculosis.**—Onodi gives the particulars of a case of extensive primary tuberculous lesion in the nasal septum cured by radical excision. The clinical picture and exploratory excision spoke for cancer and the lesion was removed by opening the nasal cavity in the median line and turning back the soft parts, not attempting endonasal intervention. The patient shows no signs of recurrence or of a tuberculous affection elsewhere to date, more than a year since the intervention.

53. **Menstruation as Source of Infections and Intoxications.**—Riebold has been making a special study of various morbid manifestations liable to accompany menstruation. He regards it as extremely important in the pathogenesis of numerous febrile affections. He thinks that there is no doubt that the menstruating uterus may occasionally prove the source of infection for actual septic affections. Fever accompanying menstruation is by no means uncommon, and is the result of absorption of bacterial toxins or of products of decomposition through the menstruating genitalia. The action of toxins is also evident in the numerous affections of the skin and nerves which may be observed accompanying menstruation, such as erythema, urticaria, herpes zoster and neuralgias. Still more important is the fact that infection or intoxication from the menstruating genital organs is liable to induce various forms of rheumatic affections, including actual polyarthritis and cardiac affections of a rheumatic nature. The course of the acute menstrual articular rheumatism does not differ in any respect from the classic type except, possibly, in its unusual mildness in some cases. In 8 of the 15 cases observed only the joints of the feet were swollen and painful, and the rise in temperature was slight and transient. The heart was not perfectly sound in any of these 15 girls; in all a valvular defect was apparent, quite serious in some. The changes in the heart were severe, out of all proportion to the mildness of the rheumatic involvement of the joints. The experiences related, Riebold thinks, establish the fact that menstrual infection or intoxication of a rheumatic nature may be the insidious and unrecognized origin of a valvular affection. Some typical examples of this febrile menstrual rheumatoid affection and of septic menstrual fever are related in detail. The only source for the staphylococci found in the blood in one case reported must have been the menstruating uterus. As menstruation ceased the symptoms subsided. In such cases there was none of the usual leucocytosis during menstruation. These septic cases are rare but undoubtedly exist and may explain certain cases of "cryptogenic sepsis." Patients who have had two, three or more recurrences of the menstrual rheumatoid affection have been free from them in his experience when the vagina was regularly rinsed twice a day at least with some antiseptic fluid. This is especially necessary when an odor suggests a putrefactive process. Frequent careful cleansing of the external genitals is important in prophylaxis of all these morbid menstrual phenomena.

Gazzetta degli Ospedali, Milan.

Last indexed, page 814.

56 (XXVII, No. 82.) Negro's Eyeball Sign of Facial Paralysis.—Di un fenomeno non ancora descritto, che si verifica durante la rotazione volontaria massima verso l'alto del globo oculare nei casi di paralisi periferica del N. facciale. C. Negro (Turin).
57 (No. 84.) Sulla genesi della opalescenza nei versamenti pseudochilosi (pseudo-chylous effusions). G. Ghedini.
58 Perforating Ulcer of Foot Cured by Stretching the Plantar Nerve.—La cura dell' ulcera perforante del piede collo stiramento dei nervi plantari. G. Baroni.
59 Changes in Kidney after Injury of Spinal Cord.—Sulle alterazioni funzionali ed anatomo-patologiche del rene, in seguito a lesioni traumatiche del midollo spinale. S. Diez.
60 (No. 87.) The sucking Reflex in Infants, in the Senile and in the Insane.—Riflesso boccale. A. Perugia and A. Bagolan.
61 Removal of Adenoids in Treatment of Whooping Cough.—Patogenesi e terapia della pertosse. L. Chierici.
62 Unilateral Secretion, Obstruction and Pain in Case of Foreign Body in the Nose.—La diagnosi di corpo estraneo nel naso. V. de Cigna.
63 Note di medicina pratica per la diffusione dell' ipodermoclisi. G. Zanoni.
64 (No. 90.) *Infezione tubercolare primitiva delle tonsille—dei vel palatini—dei testicoli—delle articolazioni. Sua evoluzione ed esiti. G. Ghedini.
65 Le scosse ritmiche del capo nel morbo di Flajani-Basedow (rhythmic jerking of head). O. Bellucci.
66 Il delirio e gli altri sintomi nervosi nella pneumonite crupale. E. Bracchi.
67 (No. 93.) *Action of Grippe on Course of Various Infections.—Sull' azione che l'influenza esercita sul decorso delle varie infezioni. S. Livierato.
68 2 casi di nevrosi traumatica. A. Conti.
69 *Contributo alla sintomatologia del carcinoma gastrico. S. Fratti.
70 Tuberculosi della ghiandola mammaria. E. Delfino.
71 Opoterapia tiroidea nel morbo di Basedow. G. Baglioni.
72 (No. 94.) Intorno a 2 casi di leucemia. Cura con i raggi Roentgen. E. De Renzi.

64. **Primary Tuberculous Infection in Monkeys.**—Ghedini reports various series of researches with experimental tuberculous infection of different organs in monkeys. In all the experiments the lymphatic system constantly played a predominant part in the diffusion of the infection from the primary focus throughout the organism, and especially to the lungs.

67. **Influence of Grippe on Other Infections.**—Livierato found that injection of the bacteria of grippe with other germs favored the proliferation of the latter. The toxins generated by the grippe bacteria lower the resisting powers or act in some other way that promotes the invasion and proliferation of other pathogenic micro-organisms. He found further that the toxins of grippe bacillus injected after the organism has already been invaded by an infection having usually a protracted course, has the effect of materially shortening the course of the latter.

69. **Cancer of the Stomach.**—In the first case described the only symptom to call attention to the stomach was occasional slight hematemesis. There were no digestive disturbances nor pains in the stomach and the appetite was good. The pyloric region was slightly tender on pressure. The patient was a man of 56 and he suddenly succumbed with signs of perforation. Autopsy revealed a perforated cancer of the pyloric region. In the second case a man of 40 had suffered for some time from dyspeptic disturbances and gastralgia when acute rapidly fatal ileus developed. Autopsy showed also in this case a cancer of the pyloric region which might have been successfully removed if the warning of the recurring gastralgia had been heeded in time. No tumor could be palpated in either of these cases.

Riforma Medica, Naples.

Last indexed, page 547.

73 (XXII, No. 27.) Azione della formaldeide sullo sviluppo del bacillo della tubercolosi e dello stafilococco piogeno aureo (action of formaldehyd). G. Martinotti.
74 (No. 28.) *Sopra il mio nuovo processo di amputazione della mammella (technic of amputation of breast). I. Tansini.
75 Blastomycetes' Soluble Products in Etiology of Cancer.—Azione dei prodotti solubili dei blastomiceti in rapporto alla etiologia dei tumori maligni. F. Sanfelice.
76 *Plastic Operations on Bladder.—Esperimenti sulla plastica della vescica urinaria. L. Baldassari.
77 Osservazioni cliniche sulle intossicazioni. F. Sarcinelli.
78 Azione del radio sull' eccitabilità elettrica dei muscoli (radium and the muscles). G. Muggia and B. Ohannessian.
79 2 casi di morbo di Pott nei quali si rinvenne il segno di Kernig. C. Pagani.
80 (No. 29.) Malattia di Glénard con cuore mobile (visceral ptosis and movable heart). G. Spagnolio.
81 Animal Tissues as Culture Medium for Tubercle Bacilli.—I tessuti animali come substrati nutritivi per il bacillo tubercolare. B. de Vecchi.
82 *Il delirio nella fase di guarigione di alcune occlusioni intestinali (delirium during recovery from ileus). P. Capasso.
83 *Resultati pratici dell' impiego del mio tifodiagnostico. G. de Rossi.
84 (No. 30.) Tumori del 4 ventricolo. C. Bestà.
85 *Il trapianto tendineo nella cura dello strabismo (tendon grafting). G. Monzardo.

74. **Amputation of Breast.**—Tansini has modified the technic he recommended in 1895, to prevent necrosis of any part of the flap. By cutting the flap so as to include important arteries in the base, there is no danger of necrosis. The pedicle must be 6 or 7 cm. in diameter, and its center should coincide with a point 3 cm. from the posterior axillary line, 5 cm. from the spine of the scapula and 10 cm. from its angle. The flap is an elongated oval, slanting from above downward toward the median line of the back. The anterior margin of the flap starts at the end of the incision where it reaches the axilla, and this anterior margin is sutured to the anterior margin of the defect. The flap contains arteries which insure its nourishment. The technic is illustrated.

76. **Plastic Operations on Bladder.**—Baldassari advocates a technic which has proved very successful in experimental work on dogs. When a small defect in the bladder wall has to be covered he takes a corresponding flap from the bladder wall

itself near by. The flap contains a layer of serosa and a muscular layer, leaving the muscular layer exposed, but this gap can easily be covered by taking up a fold in the bladder wall, freshening the edges if necessary. The muscular layer is split where the flap is cut, leaving the half united with the mucosa intact, and cutting the pedunculated flap out of the other half of the muscular layer with the serosa on its outer side. The pedunculated flap is then drawn over the defect and sutured in place, and the omentum is caught lightly above with a few stitches.

82. **Delirium and Death During Convalescence from Ileus.**—In order to prevent absorption of toxins during recovery from intestinal occlusion, Capasso urges the necessity of purgatives, preferably oil, to free the intestine of foci of intoxication from retained fecal matter. Saline injections, intravenous or subcutaneous, should also be used to help cleanse the organism by "lavage of the blood."

83. **Typhoid Diagnosticum.**—De Rossi announced some time ago that the agglutination test is more sensitive if the cultures of the typhoid or other bacilli are first heated to 60 C. for an hour. A bouillon culture, kept for 24 to 48 hours at a temperature of 27 C., is distributed in test tubes which are fused and heated to 58 or 60 C.—no higher—and kept at this point for one hour. Bacilli thus treated keep perfectly for the agglutination test at any time, and the findings are more delicate than with live bacilli, either with the typhoid bacillus, *Bacillus subtilis, Bacillus pyocyaneus* or the *Staphylococcus albus.*

85. **Tendon Grafting for Strabismus.**—Monzardo describes his technic for correcting squint due to paralysis of one or more of the muscles of the eye. The principle is the same as in tendon transplantation in case of paralysis of the feet.

Hospitalstidende, Copenhagen.

Last indexed, page 813.

86 (XLIX, No. 26.) Studier over den saakaldte typiske Radiusfraktur. (Concluded.) K. Poulsen.
87 (Nos. 27-28.) *Om Blæretuberkulosens Betydning og om dens Helbredelighed (curability of tuberculosis of the bladder). T. Rovsing.
88. *Et Tilfælde af Trigeminus-neuralgi behandlet med Röntgenstraaler. K. Faber.
89 (No. 29.) Paralysen af Musc. Cricothyreoideus. H. Mygind.

87. **Bladder Tuberculosis and Its Cure.**—Rovsing gives illustrations of specimens from some of the 56 cases of tuberculosis of the bladder that have passed through his hands. He also gives in a large picture an outline view of the kidneys, ureters and bladder in each case in miniature, grouping them all on a single plate, the tuberculous portions shaded, and each set marked with the initial letter of "recovery," "extirpation" or "carbolic treatment" as the case may be. In the female cases the outline of the uterus and adnexa is added to each set. It is an effectual method for graphic portrayal of the various conditions, for comparison both of the lesions and of the final outcome under carbolic acid treatment. Primary genital tuberculosis only exceptionally involves the bladder, he says, and it is a still rarer occurrence for the bladder to be alone or primarily affected with tuberculosis. As a rule, the bladder lesions have spread from a tuberculous affection of one or both kidneys. The only certain means of determining the condition of the kidneys is by catheterization of the uterus, and only then when the urine from one or both kidneys is found free from evidences of tuberculosis. Rovsing's cases show that a tuberculous lesion in the bladder may spread upward into the second ureter, toward the sound kidney. The urine from this ureter will then show signs of pus and tubercle bacilli when in reality the kidney beyond is still sound. In such cases, instead of abandoning the patient to his fate, as necessarily doomed by a bilateral tuberculous affection of the kidneys, a double exploratory lumbar incision, with possibly ureterostomy, may reveal that one kidney is still sound, so that its mate can be safely removed, after which the tuberculous lesions in the bladder and ureters are liable to heal spontaneously, if not too advanced. In the advanced and extensive cases, he advises treatment with carbolic acid, which he has found very effectual, having completely cured 13 patients by this means. After the bladder has been cleansed of pus he injects 50 c.c. of a 6 per cent. solution of carbolic acid, warmed to about 35 C. The fluid is retained for three or four minutes and then evacuated, when it flows out, muddy or milky. This procedure is repeated three or four times until the fluid comes away somewhat clear. The whole procedure requires only about ten or twelve minutes. The carbolic acid solution is drawn out from the bladder through a catheter, but the bladder is not rinsed afterward. A suppository containing 2 cg. of morphin is introduced into the rectum immediately after the injection, to deaden the pain which is liable to be quite severe for two or three hours after the treatment. Treatment at first —until the urine of the intervening day becomes nearly clear— is repeated every second day, later with longer intervals, and the cystoscopic findings are compared with the previous findings at first every week, then every fortnight and then each month. The results in his cases were that the tubercles subsided and the lesions healed, leaving a smooth white surface with a mother-of-pearl sheen. Rovsing thinks that the carbolic acid penetrates into the cells and interstices, following the same paths the tubercle bacilli have taken after their toxins have irritated the hyperemic mucosa of the bladder and thus produced conditions favoring the entrance of the bacilli into the bladder wall. A 6 per cent. aqueous solution of carbolic acid soon kills tubercle bacilli in the test tube, and its action in the bladder is probably enhanced by the hyperemia and phagocytosis which it induces. Be this as it may, one thing is certain, he says, namely, that for the first time a local treatment has shown itself capable of curing even very extensive and virulent tuberculosis of the bladder. He has never witnessed any serious by-effects. The urine was slightly discolored in some cases, and two little girls vomited a few times the next day. The only drawback is the pain liable to follow the injection, but this can be kept under control with a little morphin. The length of treatment varied from one to six months, according to the severity of the case. A radical cure is possible only when the bladder process is primary or when the primary focus in the kidney has been removed.

88. **Roentgen Treatment of Neuralgia.**—For four years Faber's patient had suffered from trigeminal neuralgia with two intervals of a few months' freedom from pain after resection of the inferior alveolar nerve and later of the mandibular nerve. As the neuralgia recurred with increased intensity and frequency, ten Roentgen exposures of ten minutes each were made of the upper half of the face within sixteen days. Improvement was evident at once and the patient was soon entirely free from pain. There has been no recurrence during the few months since. Faber remarks that it seems incredible that such an old and agonizing affection could be cured with merely five ten-minute exposures of the upper half of the patient's face, but such was the case.

Hygiea, Stockholm.

Last indexed, page 813.

90 (LXVII, No. 1.) Clinical Training in Surgery.—Om klinisk undervisning i kirurgi förr ach nu, med särskild hänsyn till vårt land. J. Borelius.
91 *Om hudepitelliom och deras behandling med Finsenljus (superficial epithelioma). H. I. Schlasberg.
92 Om osteitis deformans. N. A. Ahlberg.
93 Om lefverabscess och dess förekomst i Sverige (liver abscess in Sweden). B. Carlson.
94 (No. 2.) Pawlow's Research on Digestive Processes.—Om betydelsen af Pawlow's arbeten för läran om matsmältningsorganens fysiologi och patologi. L. Wolff.
95 *Influence of Goiter on Growth of Children.—Inflytandet af struma, särskildt Basedowstruma, under pubertetsåldern på längdtillväxt och förbeningsprocesser. I. Holmgren.
96 *Simple Test for Chlorids in Urine.—Ett enkelt förfarande för approximativ bestämning af klormängden i urin. G. Ekehorn.
97 *Till frågan om traumatiskt glaukom. K. Stalberg.
98 "En svensk medicinisk folkskriftsförfattare på 1600—talet." Historical sketch. V. Djurberg.
99. (No. 3.) *Den habituella skoliosen och dess förhållande till asymmetrisk tillväxt. P. Silfverskiöld.
100 *Fall af motoriska neuroser behandlade med hypnotism. E. af Geijerstam.
101 "Nystatjärna" för Katgut (star winding reel). A. Reuterskiöld.
102 N. Rosen von Rosenstein, 1706-1773. O. Medin.

91. **Treatment of Epithelioma with Finsen Phototherapy.**—Schlasberg reviews his experience with 19 cases of cutaneous epithelioma treated by the Finsen technic with eminently favorable outcome. The results were much better and prompter when the growth was thoroughly curetted beforehand, and this

combination of curettement and Finsen phototherapy he regards as a distinct advance. It is free from the possible unpleasant by-effects of Roentgen treatment, while it seems to be fully as effectual at least. The prospects are better the less extensive and the more circumscribed and superficial the growth. If the glands in the region are swollen, the epithelioma has probably burrowed too deep for its ramifications to be reached by the rays. The variety of the epithelioma does not seem to influence the results of treatment, with the possible exception of nevus epithelioma. The cure was complete in 14 out of the 19 cases, although a repetition of the treatment for recurrence was required in 2 cases. From 2 to 30 or more exposures were given, but the number was much smaller in the cases with the preliminary curettement. He has not been able to find any record that Finsen or others adopted this combination.

95. **Influence of Goiter on Growth.**—Holmgren examined 17 patients with goiter, mostly of the exophthalmic type, and noticed that all were above the average height for their years. He found further that the epiphyseal cartilage became united at an earlier age than customary, and yet the body grew so rapidly that such persons were unusually tall. He has never heard this fact mentioned, and yet it completes the modern assumption of the functions of the thyroid gland, especially the hyperfunctioning in exophthalmic goiter.

96. **Simple Test for Chlorids in Urine.**—Ekehorn has devised a chlorometer which he has found very simple and practical for daily use by the busy physician. A test-tube about 14 mm. in diameter and 23 cm. long is graduated as follows: The bottom of the tube is marked off for a space to hold 2 c.c. This is labeled U and contains the urine. A space of 1 c.c. above is labeled I for the indicator. The third line corresponds to another c.c. and is marked zero. Above this the tube is graduated to correspond to each additional c.c. up to 15 c.c. He has two reagents, similar to Volhard's method. The first reagent is a solution of iron sulphocyanid; the second is a solution of silver nitrate. The formula for the sulphocyanid is 0.332 gm. potassium sulphocyanid in 40 c.c. distilled water with a saturated solution of sulphate of iron, free from chlorin, to make 100 c.c. The formula for the silver solution is 5.815 gm. silver nitrate; 50 c.c. of nitric acid, free from chlorin, and of a specific gravity of 1.2, and distilled water to make 1,000 c.c. The amounts of the sulphocyanid and of the silver must be equivalent in the quantities taken. Urine to the 2 cm. mark is first dropped into the test-tube from a pipette. The sulphocyanid reagent is then added to the line I, then the silver solution is added, and the tube is corked and shaken from time to time, until the color reaction occurs. The fluid assumes a grayish-white aspect as it loses the tint of the sulphocyanid. When this has happened, the line corresponding to the upper limit of the fluid represents the proportion of sodium chlorid per thousand. Albumin in the urine must first be coagulated by heating. The method is similar to Volhard's, only the nitrate of silver solution is five times weaker than with the Volhard technic.

97. **Traumatic Glaucoma.**—Stalberg reviews 6 cases from the literature and reports one personally observed in which glaucoma developed after an accident accompanied by considerable emotion or nervous strain.

99. **Scoliosis the Result of Asymmetrical Growth.**—Silfverskiöld has had occasion to examine 3,234 girls in the Gothenburg schools and found scoliosis in 416, that is, in 12.8 per cent. To his surprise, none of the factors usually incriminated in the etiology of scoliosis could be detected in many of the cases, and none common to all. The largest proportion of cases occurred in apparently robust girls of 15 and 16. More careful physical examination of 50 girls with scoliosis revealed an unsuspected asymmetry in development which, he thinks, is probably responsible in large measure for the scoliosis. The right leg was found a little longer than its mate in 37 out of the 50 girls, and the left leg longer in 8; that is, in 90 per cent. of the 50 girls inspected one leg was appreciably longer than the other. The difference varied in different children, being seldom more than 1 cm. In one child the left femur was found to be 0.5 cm. and the left tibia 1 cm. longer than the right. As the children developed into symmetrical growth the scoliosis vanished as a rule. His findings suggest the importance of early detection of asymmetry in development and its correction by extra thick soles and heels, as a means of warding off or curing scoliosis. Orthopedic measures may prove useful as adjuvants, but correction of the asymmetry is the main point in treatment in the majority of cases if not in all. It is possible, he adds, that there may be asymmetry in internal structures beyond our power to detect at present.

100. **Motor Neuroses Treated with Hypnotism.**—Six cases of convulsions or tics are described, not relieved by any treatment until daily seances of hypnotism were inaugurated, when improvement promptly followed. The patients were girls between 11 and 17. In the first case the spasmodic contractions occurred in the face, but in different groups of muscles at different times. They were first noticed in infancy and had always been severe, not choreiform. After ten daily seances of hypnotism, in 1902, the tic was much reduced and had entirely subsided by the eighteenth sitting. The contractions recurred several times afterward in a mild form, but were promptly met with renewed treatment, and after several brief courses the patient has been permanently free from serious trouble since January, 1905, although a slight tendency to the tic still persists and will probably never be entirely eradicated. The father had been mentally unsound and the mother showed signs of tabes. The patient in the second case was a feeble-minded girl of 17, who stammered very much, blushed deeply at the slightest cause, and made involuntary movements with the right arm and leg—an actual and severe tic—whenever she begar to speak. The effect of some brief courses of hypnotism was striking, especially as there were no indications of hysteria. In the other cases there was a suspicion of hysteria or of chorea minor. The benefit in a case of chronic chorea was so pronounced that a trial of hypnotism in all chronic cases is urged by Geijerstam. Five seances induced great improvement, and a complete cure was realized after 20 more, with no recurrence during the four years since. One patient was a woman of 27 with severe neurasthenic tremor from childhood, a brother also presenting the same tremor. She improved very much after 25 seances, the improvement progressing after 25 more, although slight traces of the tremor still persist. The hypnosis was applied in the different cases until profound hypotaxis was induced, occasionally with amnesia.

Books Received

Acknowledgment of all books received will be made in this column and this will be deemed by us a full equivalent to those sending them. A selection from these volumes will be made for review, as dictated by their merits, or in the interests of our readers.

American Practice of Surgery. A Complete System of the Science and Art of Surgery by Representative Surgeons of the United States and Canada. Editors, J. D. Bryant, M.D., and A. H. Buck, M.D., New York City. Complete in Eight Volumes. Illustrated. Vol. I. Cloth. Pp. 818. Price, $7.00. New York: William Wood & Co., 1906.

Clinical Diagnosis. A Text-Book of Clinical Microscopy and Clinical Chemistry for Medical Students, Laboratory Workers, and Practitioners of Medicine. By C. P. Emerson, A.B., M.D., Resident Physician the Johns Hopkins Hospital, Associate in Medicine the Johns Hopkins University. Cloth. Pp. 641. Philadelphia: J. B. Lippincott Company.

I. Maternal Transmission of Immunity to Diphtheria Toxin. II. Maternal Transmission of Immunity to Diphtheria Toxin and Hypersusceptibility to Horse Serum in the Same Animal. By J. F. Anderson, Hygienic Laboratory—Bulletin No. 30. Paper. Pp. 19. Washington: Government Printing Office, 1906.

Outlines of Practical Sanitation For Students, Physicians and Sanitarians. By H. B. Bashore, M.D., Inspector for Pennsylvania Department of Health. First edition, with forty-two illustrations. Cloth. Pp. 208. Price, $1.25 net. New York: John Wiley & Sons, 1906.

Ueber Blinddarmentzündung. Wann soll operiert werden? By Med.-Rat Dr. J. Baumgartner, Oeffentlicher Vortrag mit Projektionsbildern, Mit. 32 abbildungen im Text. Paper. Pp. 41. Munich: Verlag der Aerztlichen Rundschau (Otto Gmelin).

Annual Report of the Bureau of Health for the Philippine Islands, Period from Sept. 1, 1904, to Aug. 31, 1905. Paper. Pp. 192. Manila: Bureau of Printing, 1906.

Spencer Microscopes and Accessories, Microtomes, Bacteriological Apparatus and Laboratory Supplies. Paper. Pp. 198. Spencer Lens Company, Buffalo, New York.

Annual Report of the Library Committee of the College of Physicians of Philadelphia, for the Year 1905. Paper. Pp. 6.